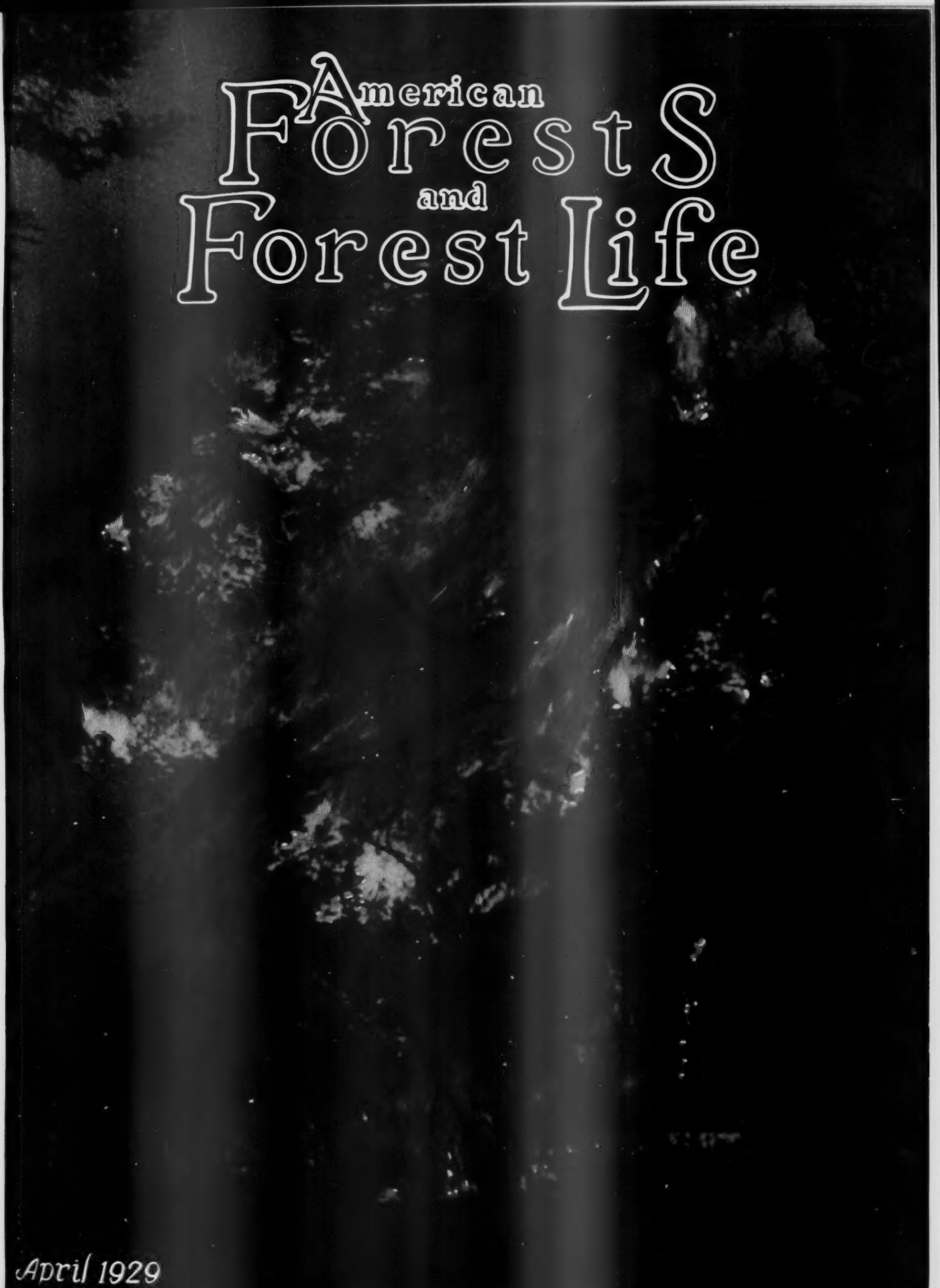
American Forests and Forest Life



April 1929

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The ESTABLISHMENT OF NATIONAL AND STATE FORESTS where local and national interests show them to be desirable; the CONSERVATIVE MANAGEMENT OF PUBLIC AND PRIVATE FORESTS so that they may best serve the permanent needs of our citizens; the development of COMMUNITY FORESTS.

FOREST RECREATION as a growing need in the social development of the nation; the PROTECTION OF FISH AND GAME and other forms of wild life, under sound game laws; the ESTABLISHMENT OF FEDERAL AND STATE GAME PRESERVES and public shooting grounds; STATE AND NATIONAL PARKS and monuments where needed, to protect and perpetuate forest areas and objects of outstanding value; the conservation of America's WILD FLORA and FAUNA.

The EDUCATION OF THE PUBLIC, especially school children, in respect to our forests and our forest needs; a more aggressive policy of RESEARCH AND EDUCATIONAL EXTENSION in the science of forest production, management, and utilization, by the nation, individual states, and agricultural colleges; reforms in present methods of FOREST TAXATION, to the end that timber may be fairly taxed and the growing of timber crops increased.

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Member A. B. C.

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AMERICAN FORESTS AND FOREST LIFE

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AMERICAN FORESTS AND FOREST LIFE invites contributions in the form of popular articles, stories and photographs dealing with trees, forests, reforestation, lumbering, wild life, hunting and fishing, exploration, or any of the many activities which forests and trees typify. Its pages are open to a free discussion of forest questions which in the judgment of the editor will be of value in promoting public knowledge of our forests and their use. Signed articles published in the magazine do not necessarily reflect the views of the Association. Manuscripts must be accompanied by return postage. Editorial and Publication Office, The Lenox Building, 1523 L Street, Washington, D. C.

The Saga of the Lady's Slipper

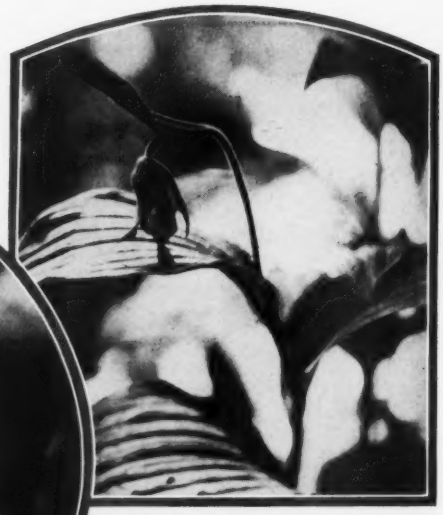
Historiette of Spring

By JAMES HOWARD SEDGWICK

April 18—The warming sun has called the first flowers into bloom and the Yellow Lady's Slippers (*Cypripedium parviflorum*) begin to stir. First they are light green shoots, like these.

May 3—The shoots have become leafy stalks. The Yellow Lady's Slippers hurry to make growth before the heavy oak leaves shall be out overhead to shade them.

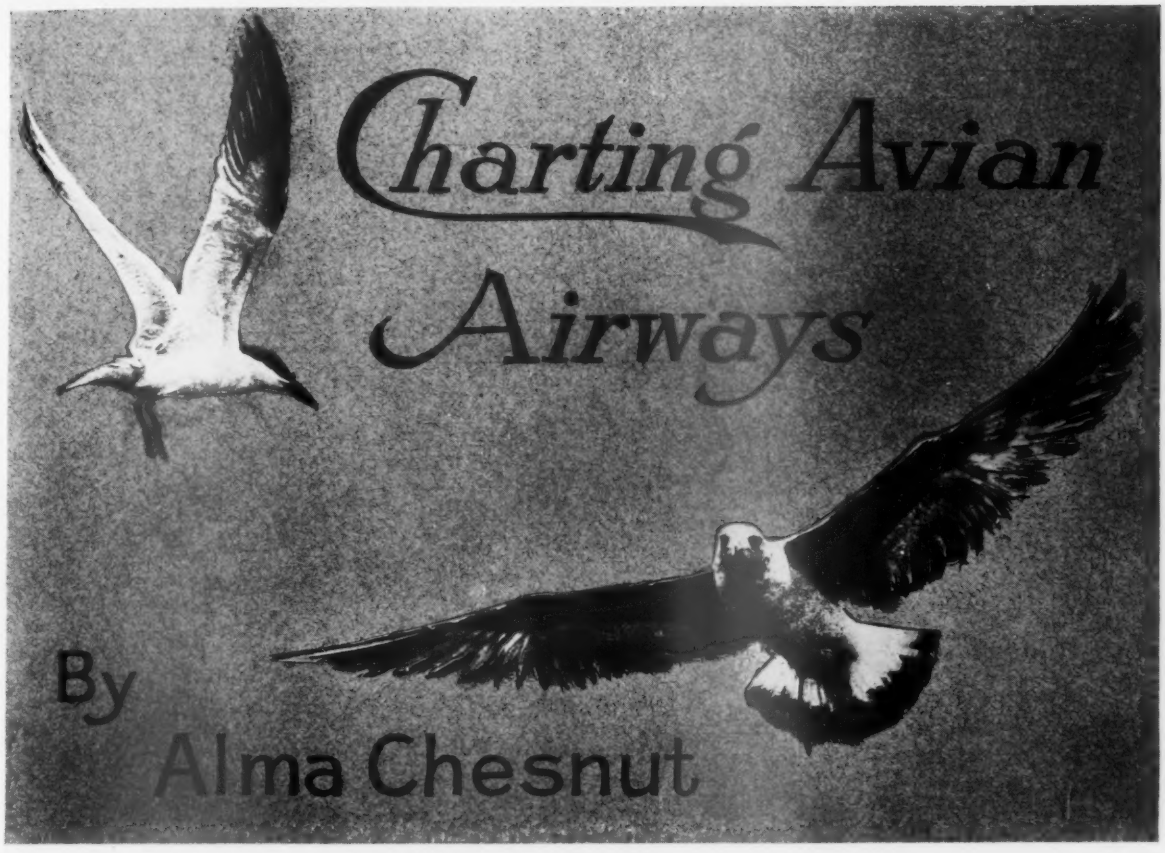
May 12—It is surprising how rapidly things grow in the springtime. In almost no time, so it seems, there are odd, shy, drooping buds that are rapidly opening in beauty.



May 14—The full blown blossom! Far down in the heart of the slipper-shaped flower there is a drop of nectar, held there as a reward to the insects that will carry the pollen from plant to plant.

May 23—Becoming old and wrinkled. The insects have done their work as pollen carriers—the plant no longer needs its blossoms—so they begin to shrivel and wither.

The consummation. Blossoms are after all only a means to an end,—the production of seed. Here is the lovely Yellow Lady's Slipper after autumn's frosts have withered its foliage. The brown pods are ready to burst and scatter their seeds, carrying the message of life eternal to the four winds.



"Thirteen shipwrecked men are in the Crozets. Send help for the love of God"

COMPRESSED within these two short sentences, punched with a nail on the side of a bully beef tin, lies a romantic and true story of the wreck of the *Tamaris* in Southern seas, of a bird's almost incredible endurance and bravery, and tragedy that overtook thirteen men who might have been rescued but for their own lack of faith in a feathered courier.

Four thousand miles across the Indian Ocean, from the Crozets to Rottnest Island, off the coast of Fremantle, West Australia, a giant albatross had winged its way, terrified no doubt by the shiny metal thing suspended by a wire about its neck. Mile after mile had reeled by as the great bird glided through the air, until finally it had alighted with a flutter of weary wings upon the shore of the only civilized island on the coast.

But as surely as the Ancient Mariner, with his cross-bow, slew the albatross, thereby inviting ill-luck, the thirteen shipwrecked sailors were responsible for the death of the bird that was to bring them aid. The wire about its neck had been fastened too tightly and, when found, the half-starved bird apparently had choked to death trying to swallow a herring.

Ornithologists feel certain that the albatross had made a non-stop flight. It was in an emaciated condition when discovered and the circumstances of its death seemed to indicate that it had not eaten since leaving the Crozets.

The bird was found on the shore of Rottnest Island by Lieutenant L. E. Broome, of the British Army, who was then a little boy. He was out walking with his parents when he saw the great bird, lying half submerged in the water. He pulled it out and gave the pitiful message to his father. Communication was then established by heliograph with the mainland and a government schooner ordered to proceed to the island to save the men. When the ship arrived the hut where the men had lived was found deserted, with signs indicating that they had abandoned hope and set out in their ship's boat, when their food stores had been depleted, never to be heard of again.

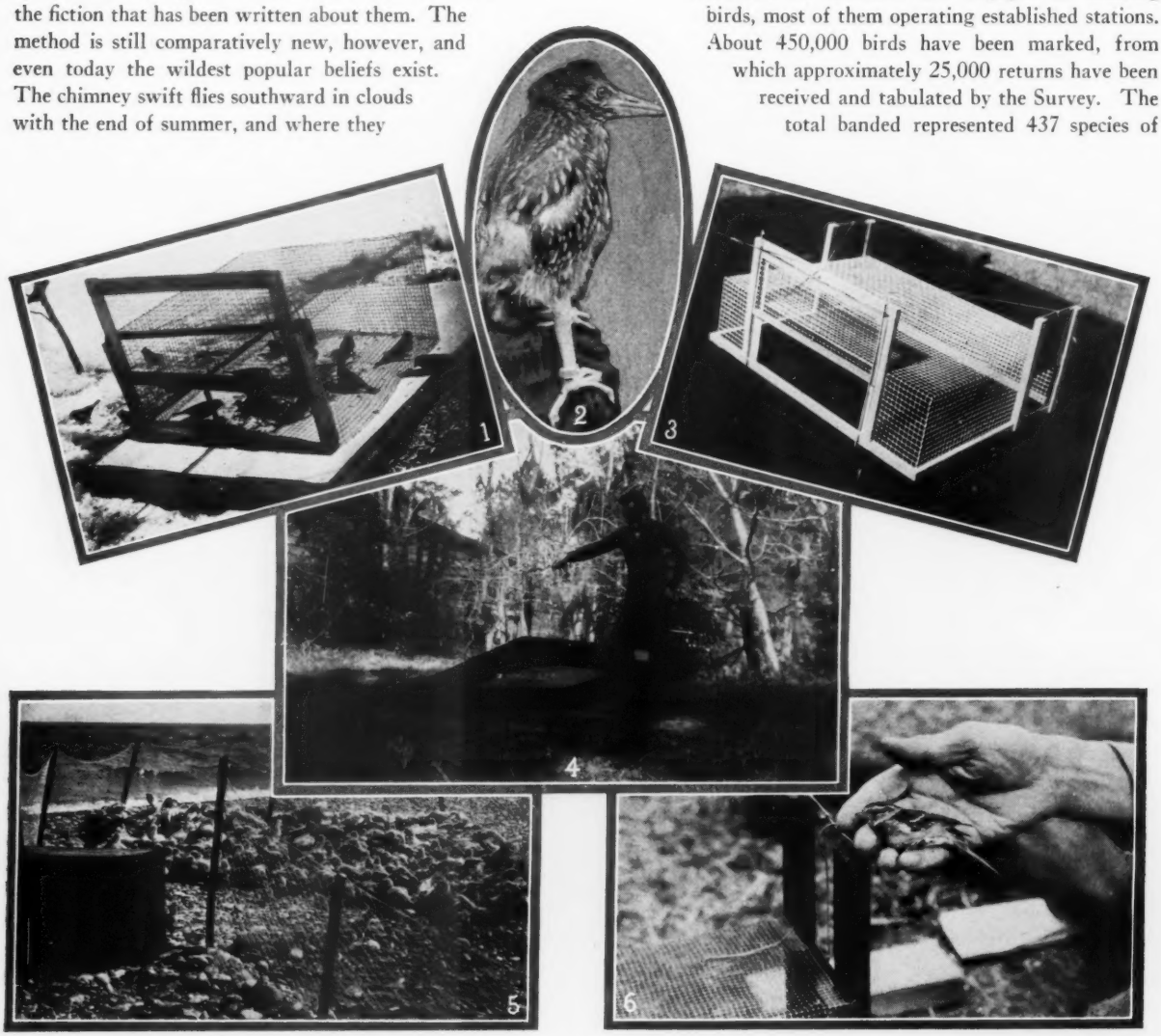
The mystery of the flight achievements of birds, their seasonal migrations and many other facts about them, have fascinated men for centuries, but constituted a puzzle to which no key could be found. Quite by accident, as in the story of the albatross, whose flight constitutes one of the most remarkable transoceanic records known to have been established by a bird, isolated bits of wonderful information have been discovered, but until recently no definite attempt had been made to collect and sort the mass of data essential to

the establishment of a true science of ornithology. There was no way of checking the isolated facts and about the entire question superstition threw its confusing fog.

In bird banding, ornithology has found a fairly adequate method of assembling information, not only about migrations, but about other interesting phases of life among the birds, and of substituting a measure of truth for some of the fiction that has been written about them. The method is still comparatively new, however, and even today the wildest popular beliefs exist. The chimney swift flies southward in clouds with the end of summer, and where they spend the winter no one knows. They gather in huge numbers in the Gulf States, then suddenly and completely vanish, giving rise to the foolish legend that they hibernate beneath the waters of the Gulf of Mexico. The phalaropes, a land bird of the Pacific Coast, presented a similar mystery for years. They, too, disappeared suddenly in the autumn. Then it was discovered, quite by accident, that they spend the winter at sea, sitting on the water and subsisting on sea life.

Since 1920, when the United States Biological Survey took over the work of marking American wild birds, increasing enthusiasm has developed, until today more than 1,400 well-informed amateurs are engaged in banding birds, most of them operating established stations. About 450,000 birds have been marked, from which approximately 25,000 returns have been received and tabulated by the Survey. The total banded represented 437 species of North American birds, and the returns, 231 different species.

Marking birds for a definite purpose was tried as early as 1803 by John Audubon, who banded with silver wire a brood of phoebes and obtained two returns. In 1902, Dr. Leon J. Cole, in a paper printed in the third report of the Michigan



Trapping and Banding

(1) One hundred nineteen birds were taken for banding in one day from this sliding door trap (photograph by the United States Biological Survey). (2) A Black-crowned Night Heron banded by A. W. Higgins. (3) This is the latest thing in pull-string traps—the "Triplex"—three-door, drop-door trap, by Higgins. (4) A large ground, pull-string drop trap—a favorite with many trappers (photograph by Edwin A. Mason). (5) A Caspian Tern corral at St. James, Michigan. There are about seven hundred young tern within the enclosure (United States Biological Survey photograph). (6) A Chipping Sparrow crouching in the hand after banding; sometimes they even "play dead."

Academy of Sciences, brought the method to the general attention of American ornithologists. Following the appearance of Dr. Cole's paper, came reports of the work of Dr. Paul Bartsch, who in 1902 and 1903 marked black-crowned night herons in the District of Columbia with bands carrying the address of the Smithsonian Institution. The records from these were apparently the first obtained in modern times, from American birds marked in a definite attempt to learn something of their travels. About this same time P. A. Taverner announced in *The Auk* that he proposed taking up this work and had made aluminum bands inscribed with the legend, "Notify *The Auk,* N. Y." Some of these were placed on birds and a few returns were received. In Canada, during this same period, Jack Miner, "Uncle Jack Miner," as he is known to thousands of school children, was engaged in establishing a bird sanctuary on his farm, near Kingsville, Ontario, now a show-place, famous throughout North America. Jack Miner had been a hunter, but, as he himself has said, he knew all the game birds hated him. He set about the task of making them love him and how well he succeeded is attested by those who know of his wonderful work. He, too, banded birds, conducting "missionary work" at the same time by inscribing a verse from the Bible upon the inside of each band. On the outer side was inscribed his name and address for returns. But these pioneer experiments failed to attract much attention and the matter was not revived again until 1908.

Immature Night Herons Black Crowned (left), Yellow Crowned (right). The latter is one of a brood which constitutes the first authentic nesting record of this Southern species in New Jersey

Right—A banded Crested Flycatcher at the nest cavity in Pennsylvania to which he has returned all the way from Central America for six consecutive years (Photographs by John A. Gillespie)

In this year the New Haven Bird Club appointed a committee, headed by Dr. Cole, and issued bands stamped "Box Z, Yale Sta., New Haven, Conn.," to volunteers within its membership. After less than a year the bands were altered, the legend being changed to the one used by Taverner, and about 1,000 were attached to birds. On the Tortugas Reservation, in Florida,

Migrators at Home

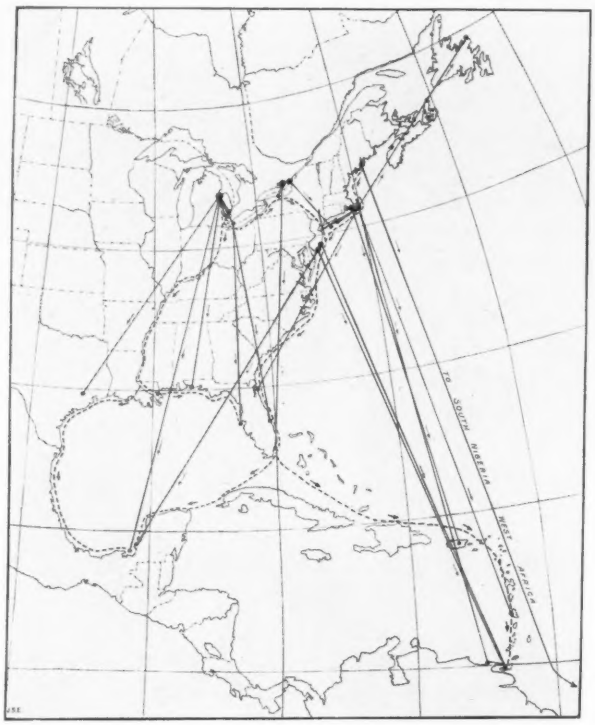
The Albatross—a peer of the feathered migrating tribes and hero of the tragedy in the Crozets—at home in the rookery in the Bird Reservation at Hawaii

Banded Wild Geese in Golden Gate Park at San Francisco. (Photograph by the United States Biological Survey)

Dr. John B. Watson was carrying on similar experiments. He marked, with paint, specimens of noddy and sooty terns, shipping them to Galveston, Texas, and to Cape Hatteras, North Carolina, air-line distances of 800 and 900 miles, from where the birds returned to their nests.

The work of these pioneers demonstrated conclusively the value of the method, and in 1909 there was established the American Bird Banding Association whose markers read, "Notify A. M. (American Museum), N. Y." This organization coordinated the work of interested persons and operated until 1920, the date when it was taken over by the Survey, though the first Survey bands had been struck as early as 1914 and 1916, when Dr. Alexander Wetmore, studying duck sickness at the Bear River marshes in Utah, banded about 1,000 waterfowl and received 174 returns.

Employing the services of volunteers in various phases of its work was not entirely new to the Biological Survey, but since nearly all species of American birds are protected by federal and state laws, certain requirements were laid down to forestall indiscriminate nest hunting by juvenile groups and to insure the collection of well-authenticated information. Special federal permits, usually supplemented by additional state authority, were issued to qualified workers, who were then supplied with bands, inscribed "Notify Biological Survey, Washington, D. C." On small bands this inscription is abbreviated. Through cooperation extended by the Canadian National Parks Branch, permits and bands also are issued to persons in Canada, which gives the advantage of a range of trapping and banding stations from the northernmost regions of the continent southward to the Rio Grande.



Charted Avian Airways

United States Biological Survey Map computed from returns showing flights by banded common terns

For the purpose of better administering and coordinating their work, the Biological Survey has organized its field observers into four regional associations, each including in its area at least one important migration highway, along which trapping stations are asked to furnish data on definite problems. Each association has as president an outstanding authority on birds, and the information collected is sorted and coordinated at the Biological Survey under the direction of Frederick C. Lincoln, who has charge of the work.

The usual method employed by amateurs in securing the birds to be marked is the use of skilfully devised traps, though fledglings and nestlings of some species are sometimes banded by specially authorized persons, skilled in handling them. All manner of clever traps, ranging from ground cages of wire netting to elaborate and decorative little houses perched on poles, have been invented by enthusiastic workers. An exceptionally successful station was operated at an upper window of a summer hotel, to which purple finches, humming birds, and other species were lured by attractive greenery, swings and perches, and banquets of seeds and berries in small dishes and baskets.

In the parlance of operators a "return" is a record of any banded bird recovered in a succeeding season or the record of a bird terminated by its death. A "repeat" is a record of a bird that has been retaken within a short period at the same station where it had been banded. Some birds get the trap habit and may be taken several times during the same day. Repeaters are valuable because they furnish an opportunity for studies of individual birds, their traits and personal habits, the development of plumage, their length of life, and other incidentals in the histories of the various species, little of which is known. Several physicians, among banding enthusiasts, are engaged in studies relating to the diseases of wild birds. By comparing these with diseases to which domestic fowl are susceptible, they hope to ascertain whether certain birds may serve as carriers, capable of transmitting disease to farm stock.

Migration studies, however, were the *raison d'être* of the first banding experiments and are still the primary concern of workers. Reports sent into the bureau from all over the continent are accumulating rapidly and gradually a mass of data is being compiled about the travels of different species, so that, ornithologists believe, it will soon be possible to prepare detailed reports on their migrations, based largely upon banding information.

Recently bird banding circles were thrown into a flurry over the announcement of the Biological Survey that an Arctic tern, *Sterna paradisaea,* had broken all flight records of banded birds by flying from Turnevik Bay, Red Islands, Labrador, to Natal, South Africa. The distance between these two points is 10,000 miles and, since the terns do not fly in a straight line, the actual distance covered probably was much greater. The migration route of the Arctic tern has

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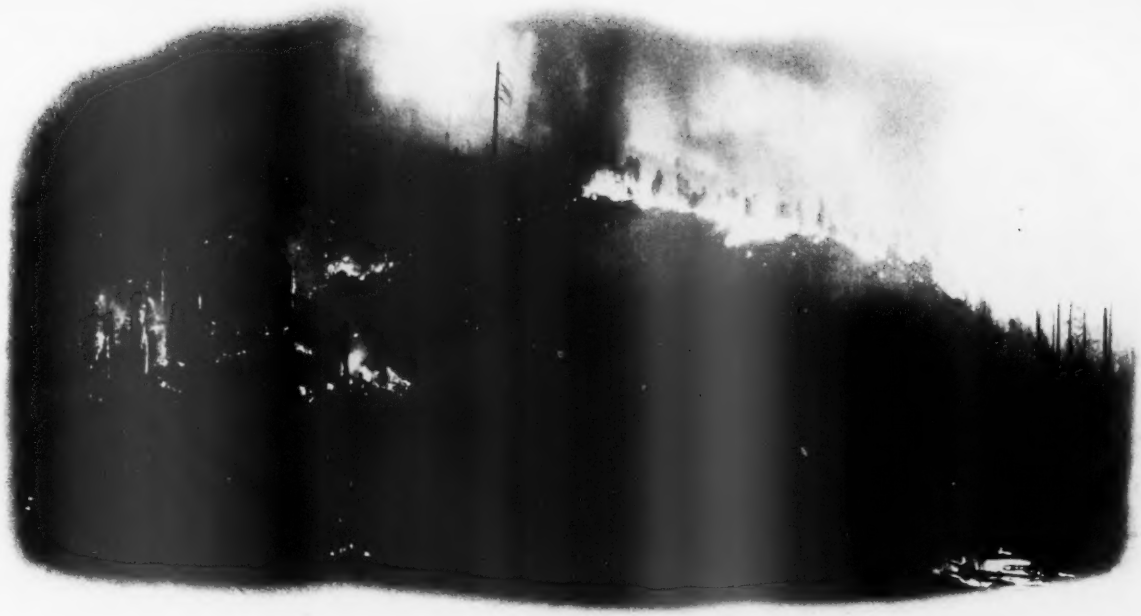


We saw in the distance the smoke clouds, flame-shot and savage

Handling a Big Forest Fire

By Kenneth F. Lee

"HELLO! Hello! . . . Every fool within forty miles is on this line! This is a fire call! Get off long enough for me to get it through, will you?"

Gus was having his troubles and was obviously irked by them. Seated at his little round map-table on top of Priestly Mountain, he had watched a puff of black smoke spread out over the timber to the southward.

He swung his range-finder around and hastily made his calculation. Then he sprang to the telephone, and after much difficulty managed to get a call through to my camp on the main Allegash, where Patrolman Randall and I were discussing the distribution of fire warning signs.

"There's a bad smoke coming up from Thoroughfare Brook, eight miles southeast from here," Gus fairly shouted. "Better get a crew in there as quick as God'll let you!"

"All right, keep your eye on it," I told him. Then turning to Randall, "Stay here till I get back. It may be a week, but you answer all calls and keep your eye peeled for more trouble."

A hasty telephone call to Long Lake Dam located Leverett, another patrolman, and my instructions to him were short. "Get every man at Poulin's camp and hike them over Priestly Trail to Thoroughfare Brook. I'll be there ahead of you. Better issue pails, mattocks, and axes. Spread yourself, now!" Hanging up the receiver, my next move was to select a light ax from the pile under the camp porch and head for Blanchette's camp.

Blanchette's crew of Canadian pulp-cutters were at their noon meal and their foreman came into the yard from the mess room in answer to my hail. From the camp yard I could see a mass of white smoke rolling upward beyond the spruce-clad slopes of Priestly Mountain, with streaks of flame and small spark flurries chopping through it. The wind seemed to be lifting it.

"Give me every man you can scare up," I told the woods-boss quickly.

Leaving their meal only partly finished, some forty husky woodsmen hastily caught up axes, pails and shovels from the storehouse and together we hit the trail for Priestly. For three miles our path was along a wire trail leading to the fire tower; then, branching to the left, we followed a tote road around Priestly Lake for three swampy miles. It was mid-summer; the air buzzed with myriads of wicked little black flies and the hurrying men panted and sweated as the heat took hold of them. Climbing a stiff ridge at the foot of Priestly Lake we got our first whiff of acrid smoke; then, from the summit, just as the crew swung down into the valley, we saw once more, in the distance, the towering smoke clouds, flame-shot and savage.

A little farther on we met a hatless man, running as fast as his wabbly legs could carry him. "The fire's right behind my camp!" he gasped. "I'm headin' for the lake!"

"Take it easy!" I hold him. "We're headed for the fire."

"You'll get burnt up, sure as shootin'!" he panted, trying to collect his scattered wits.

Little Ben Servant, wiping his streaming brow beside me,

spoke up: "C'mon back an' git burnt up with us!" The fugitive grinned shamefacedly and agreed to go along.

Over a third ridge, and at its farther base, we came upon a logging camp, closed for the summer, but with its cook room filled with supplies. I opened the door of the camp office with my axe and in one corner found what I had hoped for most of all—three full boxes of dynamite.

"Ever use this stuff?" I queried, eyeing Ben closely, for the handling of dynamite, especially in fire-fighting, must not be trusted to inexperienced men.

Ben met my eye cheerfully. "You bet," he asserted.

"Fill your pack, then; take all you can carry."

Outside, the yard was filling with woodsmen, and, stepping to the door, I called four of the most experienced to the office.

"Tom, you take ten men, four with pails, four with mattocks, and two with axes. Go to the edge of the fire and start a line around the west end. Go deep enough to get fresh earth."

Another squad was sent to the east and with them went Ben with the dynamite. The remaining men were to come on to reinforce the fire lines and patrols. Ben picked up a peavey from which the "dog" had been removed, and we went on. Over the next ridge lay a scene of disaster in one of its most awe-inspiring forms. The fire had started in some old cuttings, where pulpwood was still piled, and I noted with dismay that it was well under way. Black clouds of smoke rolled skyward, and great sticks swept swirling aloft on the eddying waves of intense heat.

"Ben," I shouted "she's got the jump on us. The front is a mile wide right now!"

Ben nodded. He had been in situations of this sort before and took matters calmly. "Let's go," he said, "I know a trick or two with the stuff in the pack here."

We kept about twenty feet from the edge of the fire and at fifty-foot intervals I would drive the peavey deep into the soft soil. Then Ben would insert half a stick of dynamite, put on a short fuse and light it. Fifty feet ahead we would repeat the operation. When the blasts went off, the soil would be pulverized for three or four feet in all directions and the men coming behind with shovels would scatter the mineral earth, forming a wide path that could be counted upon to check the advancing ground fires.

We made fast time and the men on the fire line behind were keeping pace. When darkness came we halted, having gone completely around our end of the conflagration. The wind had quieted down and the cooks came out from the camp with steaming pails of hot beans, bread, and tea. The firefighters came in, faces streaked with soot and sweat, clothes showing holes where big sparks had gone through, but all looking savagely exultant.

Another crew followed the edge of the fire, felling burning stubs inside the lines, and mopping up

"I want about twenty men to stay on the fire lines with me all night," I told the crew, "and tomorrow morning every man must be on the job at three o'clock. We can hold it if we check the main blaze before nine o'clock."

A hail came out of the darkness and a moment later in came Leverett, with fifty or more men at his back, armed with their fire fighting tools. After these men had been fed we held a council of war and decided that since the wind had subsided somewhat we might venture into the burned area and learn what we could concerning the extent of the fire.

"Cameron's camp must have burned," commented Ben. "It was down the tote road."

It was a wild journey. For the first quarter of a mile we traveled between smouldering piles of stove wood, piled along the road for use in the camps. This had been entirely destroyed and we guessed that nearly one hundred cords had been stacked in the burned piles. Time and again great tree trunks still flaming, their roots fire-killed, crashed down across our smoking trail and, when we came in sight of Cameron's camp, we found only a pile of glowing embers. A sudden flash and a coruscating shower of gleaming sparks arose from the center of the pile, accompanied with a heavy roar.

"A barrel of oil," remarked Ben calmly.

Beyond the smoking ruins of the camp a great red snake crept across the burned area, its back quivering with flickering flames, its head vanishing almost half a mile away.

"That is the pulp pile in Thoroughfare Brook," I said.

"Yes," Ben added, "that's all that's left of four thousand cords of prime pulpwood."

The long pile of burning pulp was on the west side of the fire. It offered a serious menace, for the green timber was less than fifty yards away and, should the wind shift, sparks from this pile inevitably would start hundreds of spot fires in the unburned area.

"You'll never hold that with pails," declared Ben.

"No," I agreed. "We've got to have a pump and I'd better start a man out to Churchill tonight."

The pile of pulp already burned was on a branch of a large brook and contained about five thousand cords. Less than a mile distant was another pile six miles in length which aggregated more than twenty-five thousand cords, worth nearly three hundred thousand dollars. In places the burning area came to within less than a hundred yards of this vast pile of wealth and our fight from now on would be to prevent its destruction. Much would depend upon speed, but still more on the strength and velocity of the wind.

Patrols were kept on the fire lines throughout the night and these men put out with dirt and water the small fires that crept over the edges of the narrow fire lines. The main crew hiked back to the old lumber camp, where they slept until three in the morning. Then a hasty meal was served on the rough board tables in the mess room and four volunteer cooks carried lunches to the men at the fire.

Again the men armed themselves with pails, mattocks, and axes and toiled up the long ridge. At the edge of the fire a short council of war was held. Selecting ten of the more experienced men to serve as foremen, I split the big crew into working units, assigning a leader to each and giving him the instructions for his outfit. One crew was to cross the fire to the west side and patrol the edge beyond the burned pulp pile. Another would follow the edge of the fire, dropping all burning stubs inside the lines within a hundred yards of the unburned area. Ben and Leverett with their crews were to work around the head of the fire, using dynamite when necessary.

I kept a big crew on the east side of the fire to prevent its flaming up suddenly and getting into the big pulp pile. Louis Paquet, a deputy warden, had arrived during breakfast, bringing with him the fire pump from Churchill and six hundred feet of hose, a welcome addition to our equipment.

We made our way through the fire to Cameron's burned camp and set up the pump at the edge of the blazing pulp pile. Louis coupled up several of the fifty foot sections of hose, put the intake pipe into a deep hole in the brook, and spun the flywheel. The staccato bark of the little engine answered promptly and the slim hose writhed and swelled as the water swept out at the nozzle.

The aftermath of a forest fire,—ghostly white skeletons of a once healthy and flourishing forest

Every open stretch of water was sizzling hot and one of the fire-fighters scooped up a dozen small trout, six to eight inches in length. "Look!" he shouted, "they're cooked!" and, snipping off the heads, he proceeded to eat them as one would sardines.

Thoroughfare Brook was now a steaming cauldron. The great pile of burning pulp had heated the running water to such an extent that for two miles not a living thing had escaped death by boiling. We worked up the pulp pile,

the pump throwing hot water onto every smouldering heap and, within half a mile, we came to one end of the burned portion. Small fires from time to time sprang up behind us and I sent five of the men back over the route armed with pails to fight them.

Leaving Louis in charge of the pump, my next job was to go completely around the fire to determine the extent of the burned area and see what the other crews were accomplishing. I could hear steady chopping and frequent crashes where the crews were busily engaged in dropping burning stubs and, following the brook toward the south end of the fire, I kept meeting fire-fighters with pails engaged in carrying hot water from the brook to extinguish spot fires along the edges of the big burn. By noon I had completed my circuit and estimated that about two thousand acres of partly cut-over timber had been destroyed, besides the four thousand cords of pulp.

The cooks came out with a hot dinner for the fire-fighters who gathered in groups around small fires lighted to heat the tea pails. I visited each of the groups to get their reports of progress, which were encouraging.

The crews all reported plenty of small fires, and the ax-men requested the loan of Ben Servant and his handy pack of dynamite to aid in dropping a few trees that proved stubborn against their weapons. These were mostly "punkin' pines," great hollow trees more than one hundred fifty feet high, soaked with resin and almost impossible to extinguish after they had been felled. Ben solved the difficulty in his own original way. He instructed the ax-men to cut holes in the fallen trunk, then dropped into the heart of the blazing tree trunks crude bombs he had fashioned by wrapping sticks of dynamite in moist earth. He would run back out of danger, and a moment later there would be an explosion. Generally this would rip the blazing trunk wide open, so that men with pails could soak the inside until not a spark was left.

The small hidden fires all over the two-thousand-acre patch had us worried. Almost impossible for a man on the ground to see, they still constituted a menace not to be overlooked. Among the men was a French-Canadian named Gilbert, a timber cruiser who was also an excellent climber. To him was given the task of establishing a temporary lookout station in one of the tall pines on a big ridge at a strategic point in the burned area. This he accomplished by driving ten-inch spikes in opposite sides of the big tree, clambering up hand over hand like a sailor. It was a dizzy feat at best and no one envied Gilbert his task, but finally it was done. From his precariously swaying perch astride a pine limb fully one hundred forty feet from the rocky crest of the ledge, Gilbert could locate many small but dangerous smudges that the men on the ground could not see. By shouting down instructions he was able to direct the work of the patrols to excellent advantage.

The first morning during which this spotting system was in use, Gilbert located a large fire nearly a quarter of a mile outside the main burn in a thick spruce growth. Patrols were hastily dispatched to fight this new peril, which easily might have lost us the battle, since we had been given no inkling of its presence before Gilbert shouted down his report and we were able to extinguish the blaze quickly.

For eight days this sort of sporadic warfare continued. Then a driving rain of two days' duration thoroughly drenched the soil, and the main fire-fighting crew was sent back to the lumber camps. Patrols were left on the ground with instructions to stay until they could be certain that no sparks remained on the edges of the burned area.

Wanted—Tree Pictures

U. S. Forest Service

LOBLOLLY PINE
(*P. taeda*)

The American Forestry Association is making a collection for use in its educational program during the next year of photographs of typical American trees. The members of the Association can cooperate materially in this work by sending in pictures they may have which are representative of native trees.

The picture should be of the tree when it is in full leaf and should include the entire crown as well as the trunk and base. The Loblolly Pine, shown here, is of the type needed. Prints on glossy photographic paper are preferred, not less than 3¼ by 5½. Accompanying them should be a statement giving the common name of the tree, and if possible the scientific name. The location of the tree should be included and wherever possible the name of the owner.

These will be published in due course, and we hope eventually to show all American trees of any consequence. Full cooperation from our members in securing the necessary photographs is urgently requested. Editor.

Trees for Southern Hedges

By Harold Mowry

AT one time the system of planting designated as a "hedge" had, in America, exclusive reference only to formidable barriers. During that period no extended effort was made to grow ornamental hedges, the picket or iron fence being considered as the only proper and desirable means for enclosing the home grounds. In late years this condition has changed. The field hedge fence has been largely replaced by wire, partially because of lower upkeep cost, but the picket fences enclosing yards have given way to ornamental hedge plantings.

Aside from the ornamental value of the hedge formation of planting there is an increasing utilization of such as protective windbreaks, there being for this use no effective substitute for living trees. In some sections, as those exposed to steady winds for a part of the year or where soils are loose and sandy, the destruction of natural forest growth has made the planting of windbreaks an economic necessity for the protection of cultivated fruits or other crops.

Southern growers are fortunate in the number of plants, both native and introduced, adapted to hedge or windbreak planting. Of the plants available there is an extremely wide range in size, foliage, and flowering habits which gives a fairly wide choice for any region and obviates any likelihood or necessity of too much duplication in plantings. The lower South has aptly been called the meeting ground of tropical and temperate species. The extreme southern portions of this area have many tropical or semi-tropical plants, the character of the vegetation gradually changing to the more temperate species as the northern limit of the region is reached. This situation permits the growing of a great variety of plants, including

In the Southland is found this double hedge of great beauty—built up of Cherry-Laurel in the foreground, and backed by Arbor-vitae

those which are suited to hedge or windbreak purposes.

Two distinct types of hedges are grown—the formal, or clipped, and the informal, which requires little pruning other than shaping when small. The former is more desirable for locations where a low hedge is wanted and for places where adequate room is not available for the larger growing plants. Much more attention is required to maintain the sheared hedge at its best than is necessary for the informal kind. If a sheared hedge is desired, pruning and clipping must be started while the plants are small, for by early pruning low branching is induced and little difficulty experienced in obtaining the shape and size wanted. Generally, small foliaged plants are most suitable for the clipped or formally shaped hedges.

Although small, shrubby-growing plants are generally supposed to be the most adaptable for hedging purpose, there are several species of trees that are admirably suited, and of the varieties dealt with here only those plants commonly termed trees are given consideration. This list is not complete as there are many other trees that are occasionally but not generally used for windbreak and hedge planting within the region comprising the southern states.

Tall windbreaks or hedge-like shelter-belts of Australian Silk Oak are often found in the South. It is a striking tree with evergreen, pinnate foliage and in the spring season of bloom the great quantity of orange-yellow flowers combine with the feathery foliage in great beauty

The cherry laurel, or mock orange of the South, *(Prunus caroliniana),* is perhaps one of the most satisfactory and widely distributed of the native species for hedges. The common name is derived from the dark green, shiny foliage which at a distance resembles that of an orange tree. It is indigenous from North Carolina to Texas, although in the eastern section it is found in greater numbers near the coast. The season of bloom begins in February, and the flowers, borne in short, dense racemes, are a source of attraction to bees for several weeks. The fruit, a small black drupe ripening in late autumn, is of no value other than as a food for birds. Being an evergreen, the tree is both valuable and desirable as a plant for hedges, varying in height from two to five feet or for taller, dense windbreaks, which on fertile soils attain a maximum height of from forty to fifty feet. The character of the foliage makes the species admirably adapted to clipping or shearing. It is well to bear in mind when trimming this species that the freshly wilted foliage is toxic to livestock and that care should be used in the disposition of all trimmings. The plant is relatively fast growing and under normal conditions will form a dense hedge or windbreak within a few seasons' growth.

In the warmer sections of the states bordering the coast the evergreen camphor, *(Cinnamomum camphora),* a native of Japan and China, is grown extensively as an ornamental shade tree. It is a huge spreading tree in maturity and it would seem impossible that such a tree could be confined to the narrow limits of a small hedge. Such hedges, however, are not uncommon, the camphor being well suited for this purpose except that for a month or two in late winter its appearance is somewhat unsightly. During the period of growth throughout the summer months the foliage is thick, of a light green to slightly reddish color and very attractive.

Of the coniferous evergreens the common native red cedar *(Juniperus virginiana)* is perhaps the most widely planted in the South. Its use is confined generally in hedge plantings to tall screens up to twenty-five or thirty feet in height, but by clipping two or three times annually its spread and height may be confined to very narrow limits. The trees, when sheared, form a dense wall of foliage entirely to the ground, and no trouble is experienced in maintaining a hedge of neat appearance. The conifers are especially desirable during the winter months, this desirability being even more emphasized by the absence of broad-leaved evergreens in the planting scheme.

Among the arbor-vitaes, *(Thuya spp.),* are many varieties that are adapted to hedge planting. These include some of the white cedar *(T. occidentalis)* and Chinese *(T. orientalis)* varieties, both of which are adapted to a wide range of climatic and soil conditions. The variety Rosedale is one which is very desirable because of the fineness of its

foliage but several other varieties are also planted extensively. None are generally considered to be as attractive when closely clipped as when allowed naturally to assume their normal shape.

In addition to the smaller privets which are classed as shrubs and are extensively grown as hedges, the wax, or glossy privet, *(Ligustrum lucidum)*, a native of the Orient attaining tree size, is well adapted to growing as large, informally shaped hedges or screens. The foliage is evergreen, the large leaves being leathery in texture and a dark glossy green color. The plants are almost immune to insect or disease attacks of consequence. Due to its attractive appearance, vigor of growth and adaptability to a variety of soils the popularity of the plant is rapidly increasing.

With a background of palms, this sheared hedge of Red Cedar is most effective. The Red Cedar is more widely used in the South for hedges than any other coniferous evergreen

This low hedge of Yaupon, backed by feathery Red Cedar, is beautiful and practical. The plant has little or no resemblance to the common holly save for its brilliant berries, and it is ideally adapted to close clipping

The oleaster, *(Eleagnus angustifolia)*, a small deciduous tree from Europe, thrives on limestone soils and can be grown in the colder areas of the South. The foliage is striking in that the upper side of the leaves is light green and the lower side silvery white. The smaller branches are also silvery in color which gives the plant an unusual appearance. By regular pruning the tree can easily be shaped.

One of the best defensive hedge plants for other than the coldest regions is the trifoliate orange *(Poncirus trifoliata)* from Japan. Its light green leaves are trifoliate and with close pruning will form a fairly dense wall. The tree is deciduous but because of the deep green color of the twigs does not assume the dead appearance characteristic of most deciduous plants during the winter months. Numerous long stout spines are borne on both the large and small wood and if closely planted a hedge of this material forms an almost impenetrable barrier.

As a large-sized defensive hedge the buckthorn *(Rhamnus cathartica)* can be grown in all but the most southern areas. A native of Europe, it has become naturalized in many places in the eastern part of America where it thrives in loamy soils and partially shaded locations.

In the northern or colder portions the native honey or sweet locust *(Gleditsia triacanthus)* is used for ornamental tree and protective hedge plantings. The tree attains a great height with light green, finely divided pinnate foliage. It is armed on both trunk and branches with branched thorns three to four inches long. By close planting and severe pruning the trees can be grown to form a dense, almost impenetrable wall.

Three hollies *(Ilex spp.)*, two native and one Chinese, can be grown in most of the southern territory. The foliage of these plants is always pleasing and the red berries, which are in evidence for several weeks, add much to the attractiveness of the genus. All are somewhat slow growing but because of this characteristic require less annual care in pruning. The hollies are dioecious and as there is no method of ascertaining the sex of the tree until it blooms it is advisable to plant grafted stock. This will insure a preponderance of pistillate flowering plants in the hedge resulting in a maximum production of berries. The Myrtle-leaved holly

(*I. myrtifolia*) is used to some extent as a rootstock, as the germination of seeds of this species is not as difficult as some of the others.

The yaupon or cassena *(I. vomitoria)* is a small, shrubby, much-branched tree found as an indigene from Virginia to Texas, mostly not far removed from salt water on the eastern coast. Its leaves are small, very rarely two inches in length, coarsely crenulate-serrate without spines, and bear little or no resemblance to those of the common holly. The berries, much smaller than those of the American holly, are produced in abundance, coloring to a bright red in early winter and persistent until spring. The plant is ideally fitted to close clipping and may be grown as a high or low hedge of nearly any desired shape.

It may be said without fear of contradiction that the Chinese holly *(I. cornuta)* has the most attractive and striking foliage of any of the genus. The leaves are quadrangular-oblong, with three spines at the apex and one or two on each side of the base. They range in size from one to three inches in length and are a dark glossy green color. The berries are somewhat larger than those of the American species but apparently are not as persistent. The plant is seemingly adapted to most of the lower area of the southern states.

Of the acacias, the Sydney golden wattle *(Acacia longifolia)* is the only one grown to any extent, its use being confined to the warmer areas not far from the Gulf or Atlantic seaboard. The plant normally is a slender tree and is of particular value in its ability to thrive on thin sandy soils and to withstand heavy winds. Being an exceptionally vigorous grower it can be grown as a large unpruned barrier or, if desired, may be kept within bounds by regular pruning. The hornbeams (*Carpinus spp.*) are dense foliaged, deciduous trees that lend themselves very well to hedge planting. They thrive on a wide variety of soil types but are of comparative slow growth. The American hornbeam, or blue beech (*C. caroliniana*), grows as a native throughout most of the South. Its leaves, from two to four inches long and of a bluish-green color, form a rather dense top. If the trees are transplanted when small and kept closely pruned a thick-foliaged hedge can be grown. The European hornbeam (*C. betulus*), a native of Europe and eastern Asia, is a taller growing species and is considered by many superior for hedge plantings. It is adapted to the same areas as the American species.

In the area not far from the Gulf coast the Jerusalem thorn (*Parkinsonia aculeata*) can be grown as an ornamental hedge. It is a small, smooth-barked, thorny tree having slender, somewhat pendulous branches and very long and narrow pinnate leaves. An abundance of bright yellow flowers, borne in racemes, are in evidence in early spring, later scattered blooms appearing at intermittent intervals thereafter for several weeks. The plant is somewhat unusual and if well grown is usually the subject of favorable comment.

The evergreen Japanese pittosporum (*Pittosporum tobira*), a native of China and Japan, is planted extensively as a hedge plant in the lower South. The plant has a heavy foliage, the leaves being dark, shiny green, leathery, and borne in whorls on the stem. It is very satisfactory for growing as a clipped hedge. A variety having a white or cream colored variegation is also quite widely planted. Both thrive in partial shade and can be used for seacoast planting.

Three of the hawthorns *(Crataegus spp.)* are grown as hedges in the northern portion of the region. These are small trees having very attractive foliage and flowers and armed with long slender spines on the trunk and larger branches. The native cock-spur thorn *(C. crusgalli)* is particularly well adapted and quite widely planted. The others (*C. oxycantha* and *C. monogyna*), natives of Europe and North Africa, are planted to a lesser extent but are very attractive because of their free flowering habit, handsome foliage and showy fruits.

For tall windbreaks, of value as such only during the summer months, the deciduous sweet gum (*Liquidambar styraciflua)* with its heavy foliage will be found satisfactory. In habit of growth the trees are pyramidal and when not crowded are uniformly symmetrical. They are rapid growing and thrive on a wide variety of souls. The foliage, very much resembling that of the maple, is exceptionally free from insect or disease attack.

A striking flowering tree, the Australian silk oak *(Grevillea robusta),* is grown in approximately the same area as the Australian pine and although it cannot withstand salt spray it thrives in dry, sandy soils. Tall windbreaks can be grown by close planting of the trees but the subject is not suited to low hedging or much pruning. The evergreen, pinnate foliage is feathery in appearance and very attractive. During the season of bloom which occurs in the spring the combination of this foliage and the great quantity of orange-yellow flowers is of exceptional beauty.

The free-blooming crape-myrtle *(Lagerstroemia indica)* is an old favorite in the South. A native of China, it has escaped cultivation in places and large trees are found near old habitations thriving almost as well as if cultivated. No cutting of the tops should be done until after the season of flowering is past. The crape-myrtles when properly grown in hedge formation truly form a "flowering fence."

In April

If I had power like Joshua
To make the sun obey,
I'd have it stop in April
And stand still for a day—

When peach trees dress for pageants,
And maples still are red,
And many a brave spring-beauty
Wakes in its leaf-strewn bed;

When garden-kept forsythia
Steals from the sun its gold,
And lends a paler tinting
To spice-bush in the wold;

When buds hold bursting secrets
On every bush and tree,
And birds are tuning heart-strings
For mating melody.

Could I command the sun to stop—
Did I say for a day?
I'd live a year in April
If I could have my way!

—Mabel Gillespie

Proximity to the oil fields accounts for the presence of asphaltum, which entrapped prehistoric animals at the La Brea fossil pits in Los Angeles. In the left background may be seen a roof which covers one of the pits

The Park of a Million Bones

Famous California Fossil Beds to be Preserved

By Hi Sibley

AGES ago, several thousand huge prehistoric beasts committed the fatal error of stepping into some asphalt pits at the southwest corner of this continent. As a result the old Rancho La Brea on the outskirts of Los Angeles, California, became one of the largest fossil beds known to the world. And now, practically exhausted of bones, the site has been transformed into a public park, and formally named after John Allen Hancock, whose parents once occupied the property as a homestead and who has deeded the thirty-two acres to the people of Los Angeles.

While a recreational area in one sense, this "Pleistocene park" will be a great attraction to students, educators, and scientists, for not only will the original topography be preserved as far as possible, but the more important pits will be left as they were at the completion of scientific exploration. Under the direction of Dr. William Alanson Bryan, Director of the Los Angeles Mu-

A heap of Giant Sloth pelvises in the La Brea fossil pits. Over a million individual bones, comprising five thousand fossils, were taken from the pits

seum of History, Science and Art, who conceived the entire park plan, breast-high concrete parapets will be constructed around the edges of the craters to protect both the pits and visitors. In one of the larger pits, fossils will be left embedded just as they were found. A comparatively modern period in California's annals will be covered by a structure in the style of an early Spanish hacienda, adding a further note of historic interest.

Sculptural restorations are to be made of some of the most numerous specimens of the prehistoric fauna represented here, and these will be placed in the park amid settings as nearly like their contemporary flora as can be reproduced.

Of the five thousand fossils taken from the pits—over a million individual bones—the bulk of them are now at the Los Angeles Museum, many of them assembled. As an example of the amazing number of animals which were trapped in the gummy masses of asphaltum, tar, and oil-soaked sand and earth, one pit alone delivered up 185 skulls of the prehistoric wolf and 268 of the sabre-toothed tiger. Another pit scarcely large enough to contain the bodies of two entire elephants was the resting place of the skeletons of seventeen of these huge animals.

Several theories have been advanced to explain the tremendous number of skeletons found in so small an area. A plausible one, according to Dr. Bryan, is that here existed the unusual combination of drinking pool or stream in close juxtaposition to the treacherous asphaltum pits. In fact, an intermittent stream running diagonally through the property indicates the possible natural drainage of the Pleistocene epoch. Attracted by the drinking water, they may have stepped too far out on the brittle, crumbling edges of the asphaltum pits which possibly were obscured by a coating of wind-borne dust or soil. Or, at night they may

(*Continuing on page* 244)

A potential animal trap? Perhaps, too, the asphaltum pools of the Pleistocene epoch looked like this, when covered with water, to the prehistoric mastodons and sabre-tooths who met their fate on this very spot. One of these pools is to be preserved as a public park. Above: The insert shows how even today small animals are constantly becoming trapped in shallow pools. This ground squirrel was caught in an oil seep only half an inch deep!

One of the large tar pools now existing on the property will be spanned by an ornamental foot bridge, serving as the entrance to the park. Ornamental shrubbery will be planted around the four sides of the tract, and the outside bordered by an irregular bed of Hawaiian hibiscus. This will be nearly a mile in length, and the largest hibiscus garden in existence. More than a thousand varieties will be planted, not a single one of which has heretofore been grown so far as is known on the mainland of the United States.

Maple "Ambrosia of the Gods"

By MAUDE C. JAMES

"SAP'S runnin'!"—What a thrill went through us as youngsters when on the first clear sunny morning in March after a freezing night it was discovered by someone that the annual maple sugar season was at last at hand.

A stir of excitement took possession of the old farm—oxen were yoked to the sled and one group started for the woods to break the roads. The rest went into the attic of the old wood house where were stored the wooden buckets which were painted red on the outside and from long weathering had become a dull brown on the inside. Wooden spiles made from small branches of the elderberry tree were gotten ready, and when everything was assembled and loaded on the big sleds, everybody started for the woods.

After the trees had been tapped and sap had begun to fill the wooden buckets, the fire was started under the old black kettle near the edge of the sugar bush. As fast as a roaring dry wood fire could do it the sweet sap gathered from the sugar orchard was converted into a strongly flavored thick, sweet, syrup—smelling of the woods and tasting of sunshine and of the out-of-doors.

The picture has certainly changed from that not far distant day to this. In general, fine equipment is now in operation—modern in every respect. In some of the larger groves the sap is collected by means of pipes running from one tree to another which connect with a large main pipe leading to the storage tank in the sugar house. The sap in this way is kept free from all matter tending to discolor or sour. For the most part, however, the sap is gathered in galvanized buckets at the trees and is hauled to the sugar house in wooden or metal tanks. The up-to-date evaporator with its high pressure system "boils in" barrels of sap in a

With the word—"sap's runnin'!"—on some clear sunny morning in March after a freezing night, the youngsters are thrilled to know that the maple sugar season has at last come and the trees are about to be tapped

In gathering the sap, a hauling tank is necessary for a tapping operation of any size. Wooden tanks are gradually giving way to the steel or galvanized iron tank

few hours. This system compared to the old slow boiling kettle over a hot fire in the open at the edge of the sugar bush is a contrast which we cannot comprehend without actual observation.

The character of maple syrup and sugar varies widely in respect to color and flavor. In certain sections of the country a quantity but not quality product is obtained due partly to the use of primitive equipment. Soil, the type of tree, and general climatic conditions all contribute to the quality of the syrup. The grove that is located on a southern slope with a sandy soil will produce under best conditions a light, clear, delicately flavored syrup that is excellent. On the other hand, the grove that is located in soil that is heavy and sour with a northern exposure will produce a syrup that is not clear and not delicately flavored.

For various reasons the production of maple syrup has not demanded as much attention in some sections as any one of several other types of farming. Therefore, the interest in up-to-date equipment in these sections is lacking. In Vermont this industry yields a yearly revenue of between $2,000,000 and $3,000,000 and fills in a season when other work on the farm is not pushing the farmer for time. Vermont farmers, in the main, seek to produce maple sugar and syrup that will market for the highest prices, and to a large extent they have invested in the best equipment available.

In eastern Canada the story is a little different because a large part of the maple syrup produced by Canadian farmers in this region is obtained from the forests owned by the big lumber interests. The farmer simply operates on forests in which he has no financial investment. Consequently, whatever he realizes is to his advantage so he still carries on with the old kettle. In the portion of Canada west of Sherbrooke where most groves are individually owned, the farmers are looking forward to the future of the industry, and are putting in new equipment as fast as possible.

The marketing methods have not kept pace with the improvements in equipment. The high standard (if best prices are to be realized) which has been fixed upon in the maple industry in respect to the color and flavor of maple syrup and sugar requires in the first place that the most sanitary methods prevail. Unless a fine product is available for market, little interest is shown in it. Each state furnishes to all maple farmers upon application a complete set of color standards by means of which syrup can be graded. With these samples the farmer can determine before his crop is marketed about what grade of syrup he has harvested. Little demand is made of the farmer in the

Crude iron kettles are still used for boiling maple sap in many parts of the country. This inexpensive equipment, however, requires longer hours of labor and results in a more inferior quality of syrup than when more modern evaporators are used

way of packaging his maple syrup for market. The great mass of syrup is sold directly to the wholesaler in metal barrels furnished by him. A reason for this volume of wholesale business is due to the heavy financial pressure to which the farmers have been subjected in the past years. One dealer in a certain section ties up the output of maple products in this way. He scatters the syrup barrels early in January at the country stores in each small town where food and other supplies have been charged during the winter. The storekeeper takes over the syrup from the farmer and applies it to his account. Later the wholesaler comes along and takes the syrup off his hands. This method of securing syrup is very forceful in communities where work is not available the year round. Much syrup flows into this market, a large part of which finds its way eventually to the blended syrup companies, the tobacco manufacturers and to the confectioners. The farmer is forced to accept whatever price is offered, of course. This condition naturally interferes with marketing under the best conditions.

This is a boiling house equipped with a modern evaporator. Partitions in the pans of this type give the liquid a zig-zag course, dividing that which has reached the syrup stage from the raw material. The syrup in the pans is kept at a level through the use of floats and siphons

The market for sugar is more limited than that of syrup. In the states that lead in the production of maple products, the best grade of sugar is made into cakes of varying degrees of hardness and different sizes and is sold by the farmer at retail. This market is afforded him in different ways, through the tourists, by means of roadside markets, and to distant customers with whom in one way or another he has formed connections.

In Vermont and New York, however, and also in Pennsylvania, there is a substantial production of tub sugar which is lower in grade than cake sugar. This grade of sugar finds its way to the wholesale dealer who sells it to the big buyers of syrup, the blended syrup companies, the tobacco manufacturers, and the confectioners.

In 1921 when a wholesale slaughter of maple trees was taking place in certain sections of the country due to a depression in the price paid the farmer for maple products, a survey was made by a group of individuals interested in the future of the industry to seek a remedy for the conditions existing at that time. It was found that the farmers operating maple groves were not sufficiently organized to provide adequate marketing facilities for themselves. An attempt to overcome this difficulty was made by a group of farmers in Vermont in the organization of a cooperative headquarters at a central point. The Department of Agriculture gave them the push-off but due to faulty financing arrangements the attempt failed. No action has since been taken to revive interest in a farmers' organization and today the industry is controlled almost entirely by one man. Price stabilization has come about to some extent and gradually the slaughter of maples has subsided.

There is scarcely any exportation of maple products from the United States due to the fact that the entire amount produced is consumed here. The State of Ohio, for instance, which ranks third in the quantity of maple syrup produced, harvested in 1928, 4,017,000 pounds, on a sugar pound basis, and used the greater part of this production within its own state limits. New York State, which is second in production, marketed 6,203,000 pounds. Vermont, which leads in the production of maple products, sent to market last year in syrup and sugar on a sugar pound basis 9,437,000 pounds. Seven other states: Maine, New Hampshire, Massachusetts, Pennsylvania, Indiana, Michigan, and Wisconsin produce maple syrup and sugar in varying quantities, a large part of which is marketed locally. If all of the best syrup produced in the United States were divided up among the 100,000,000 or more people in this country, each person would get only a very small quantity.

The exportation from Canada of maple products, on the other hand, is a flourishing business. During the year 1928 between 7,000,000 and 8,000,000 pounds of syrup and sugar on a sugar pound basis, were brought into the United States at an approximate valuation of $1,500,000. It is very profitable because there is constant demand for this grade of maple by companies producing blended syrups and the tobacco interests.

The maple business in the United States has not reached the high peak of success that those interested in the industry had a right to expect. It is known that hundreds of thousands of maple trees remain untapped each year. The absence of marketing facilities in the past has had a great deal to do with this lack of success and slow development. Whether or not an improved system of marketing is in store remains to be seen. The heavy importation of maple products from Canada each year also contributes to this sluggish con-

(*Continuing on page* 226)

George D. Pratt
President, The American Forestry Association

Conference Reflects New Era in Forestry

B. F. Williamson
President, The Florida Forestry Association

Annual Meeting of The American Forestry Association Features Forests as a Source of New Wealth and Permanent Prosperity in the Greater South

SPECIALISTS and laymen alike were aroused to the opportunities the forests hold for the development and permanent prosperity of the South, and for the nation as a whole, when members and delegates from more than twenty-five states assembled at Jacksonville, Florida, February 27 and 28, and March 1, for the 1929 annual meeting of The American Forestry Association, held jointly with The Florida Forestry Association.

They heard, too, in a decisive manner, that marked progress toward the modernization of forest growth, utilization and expansion would be brought about by the adoption of entirely new codes in the matter of forest protection and management. They were told of the grave necessity for changes in the southern practice of woods burning, of its devastating effect on tree growth, wild life and soil fertility. It is to this end that The American Forestry Association is conducting its Southern Forestry Educational Project in Florida, Georgia and Mississippi.

Ralph W. Gwinn

Perhaps never before in the annals of forestry have such recognized authorities assembled to broadcast truths and facts concerning the South's timberlands, where the practice of woods and range burning accounts for more than eighty per cent of the nation's forest fire losses each year. These forested regions were expertly dissected, relieved of their plague, and reconstructed along the lines of lasting wealth and beauty. Dr. Charles L. Herty, of the Chemical Foundation, New York, internationally recognized for his studies of the chemistry of tree life, prophesied a new era for the South in the manufacture of paper from its fast growing and abundant stands of slash pine. In Dr. Herty's opinion, the paper industry which now goes into Canada for its spruce will soon turn southward and find in the slash pine the raw material for a revolution in the industry.

The possibilities of reclaiming waste, cut-over and burned land in the South were graphically illustrated by Ralph W. Gwinn, Vice-President of the J. C. Penney - Gwinn Corporation, New York. Under Mr. Gwinn's direction many thouasnds of acres of such land in northern Florida are being turned into valuable timber and turpentine areas.

The meeting was also outstanding in a number of strong appeals for the protection of the South's picturesque wild life and its woodland haunts, and the perpetuation of its natural beauty through the medium of a National Park, improved State forests and parks, and roadside tree planting. Dr. David Fairchild, Senior Plant Explorer of the United States Department of Agriculture, who has searched the world for the unusual in plant and tree life, told of the wonders of the Florida Ever-

Reuben B. Robertson *Mrs. W. S. Jennings* *E. A. Sherman*

glades and asked foresters and conservationists of the country to support the movement which would create the Tropical National Park in the southern reaches of the Everglades.

Following a message of welcome by Mayor John T. Alsop, Jr., of Jacksonville, George D. Pratt, President of The American Forestry Association, opened the convention with an address on "The South and Its Forest Wealth." The Wednesday morning session was then devoted to forestry and the land problems of the South and the chemical wealth to be found in southern pines. The afternoon session was given to wild life and its value, both economic and social, to the future prosperity not only of the South but of the entire country.

The Thursday morning session was pointed to the South's unpardonable sin, woods burning. Public education in forest fire prevention featured a number of dramatic and constructive papers dealing with the effects of forest fires on soil fertility and forest growth. The afternoon meeting was devoted to forests and the forest industries of the South.

In his opening address, Mr. Pratt prescribed a large, clear-cut program of forest protection and forest development for each southern state—a program which would set forth in clear relief State and public interests in encouraging private forestry, establishing State and National Forests, and providing adequate protection for the forest lands of each state.

"No other section of our country," said Mr. Pratt, "with the possible exception of certain regions on the Pacific Coast, can match this great Southland in forest soils, forest trees and forest climate. Through more than one generation nature has demonstrated the truth of this statement, and I think I am safe in saying that in point of diversified service to mankind your slash pine stands supreme.

"The forest lands of the sixteen southern states total more than 200,000,000 acres, and although seventy-five per cent cut over, these lands today are producing annually fifty per cent of the nation's forest wealth while practically one hundred per cent of our naval store needs are met by your southern pines. In fact, the South leads in the production of all important forest products except laths, shingles and pulpwood, which, converted into money enrich the South by a

Dr. Charles L. Herty *Dr. David Fairchild* *I. T. Quinn*

billion dollars annually. To keep these 200,000,000 acres continually growing timber is a task that cannot be successfully accomplished without public interest, understanding and support. Minimizing the task, saying that nature will do it, keeping the public in ignorance of the facts merely serves to delay and make more difficult and expensive the solution that must eventually be arrived at. It will not suffice to leave it to the foresters or the timberland owners because major remedial measures in the last analysis are beyond their control. Furthermore, forestry in the South is a public question quite as much as a private one. In brief, it appears to me that the fullest use and development of the vast domain of forest lands in the South can be brought about only by a joint effort in which the public, the forest industries, the several states and the National Government become virtually a partnership.

"This comes down essentially to a comprehensive plan of forest land use in which by fostering private forestry and the local forest industries as much of the land as possible is kept productive by private initiative, and those lands not susceptible to profitable private management are cared for by the States and the Federal Government. Once such a program in definite terms, formulated by State leaders, is instilled into the public mind as essential to coordinated state development, then, and only then, I believe, will adequate public support and understanding be forthcoming to bring about real forest fire protection, fair forest taxation, needed forest research, permanent and conservative management of private and public forests and the full realization of the forest wealth of the South."

Dr. Charles L. Herty, of the Chemical Foundation, New York, followed Mr. Pratt and made a number of startling prophecies concerning the slash pine, the versatile tree of the South. In his address "Liquid Gold from Southern Pines," Dr. Herty pictured America's paper industry moving to the South and the dawning of a new day for the millions of acres in the piney wood regions.

"We are on the threshold of a new era in the utilization of our forest products, the age of cellulose," declared Dr. Herty. "Suddenly, the wood consuming industries find themselves visualizing their raw material not as a substance fit only for sawing and planing, but as the foundation of a tremendous new development, the chemical conversion of cellulose, with the consequent enormous enhancement in value—into rayon, artificial leather, celluloid and pyroxylin plastics, guncotton, lacquers, transparent glass, and a host of new industries which will follow as research progresses. The paper and pulp manufacturers must constantly seek raw material.

"Where is all this material to come from? From the pines of the South, for nature has supplied that region of our country with bountiful climatic advantages for rapid reproduction, and for year-round operations. The chemist through his researches will overcome advantages now held by northern woods; the owner will see to it that seedlings are given a chance through prevention of destructive ground fires; and the forest itself will furnish income from two sources, pulp

Banquet Speakers

Will C. Barnes, Miss Martha Berry, Dr. John C. Merriam

Harry Lee Baker *E. L. Demmon* *Herbert L. Stoddard*

Officials of The American Forestry Association with delegates before the sessions opened at the Chamber of Commerce Auditorium, Jacksonville, Florida

from the thinnings and naval stores from the young trees.

"Chemically speaking, we have entered this age of cellulose in a somewhat empirical way. Before full development takes place we must attack the fundamental scientific problem of the structure of the cellulose molecule, using our chemical means. Once this knowledge is gained, new uses and new industries will rapidly unfold. Research now under way foretells the conversion of cellulose to sugar and thence to food uses.

"Important research is going on in the naval stores industry. The physiological resin content of the southern pines is a disadvantage to the paper maker. Here the chemist will through his research accomplish its economical removal. We can look for the slash pine, providing tests recently conducted prove true, to furnish all kinds of paper and all forms of cellulose."

The place of forestry in the land problems of a new era was constructively dealt with by E. A. Sherman, Associate Forester, United States Forest Service, who predicted that in the future forestry will be the most potent single factor in the stabilization of land both as to use and price.

"We are entering an era in which lands will be more efficiently utilized, our country better organized, and each region more thoroughly specialized," said Mr. Sherman. "We will no longer attempt to scatter agricultural settlements promiscuously through regions primarily forest, where one man's selfish desire to use the property of others for free range leads him to burn the woods and nullify the efforts of a whole community. Our forest units will in the new era be larger and more compact. Conversely, our agricultural units will be more thoroughly developed, and farm and forest activities will be synchronized to the benefit of both."

The afternoon session was featured by an address by I. T. Quinn, of Alabama, Chairman of the National Game Conference, on "Wild Life as a Southern Asset." Problems of forest conservation and game conservation, he said, are mutual, and it is necessary, if they are to be solved to the extent of their opportunity, that the two forces work together.

"The greatest asset to the South in its wild life," said Mr. Quinn, "is not food value, great and as valuable as that is, but in the opportunity that is given to spread the gospel of forest conservation along with game conservation."

He further pointed out that there is likelihood of more rapid development on the part of

FIELD TRIP

Demonstrations at the experimental turpentine area of the Penney-Gwinn Corporation. Right, motorcade before the fire observation tower of the Black Creek Forest Protective Association

landowners growing timber by stocking their areas with game. By renting hunting and fishing privileges, he said, the forest landowner would not only create a greater public appreciation of the value of forests, but from the money received would be able to pay a portion, if not all, of his taxes on the growing timber. Herbert L. Stoddard, of the United States Biological Survey, speaking on "Fire, Its Use and Abuse on Southern Quail Preserves," explained the experimental use of fire as a means of keeping ground vegetation in proper condition for quail on preserves, stating that "most preserves can be kept in condition without the use of fire, by means of tractors and plow-harrows, but at a greatly increased expense."

In concluding the first day's session, Mrs. W. S. Jennings, President of the Florida Legislative Council, told of the need in the South, particularly in Florida, of highway beautification, outlining legislation now before the Florida Assembly for more extensive roadside tree planting in that State.

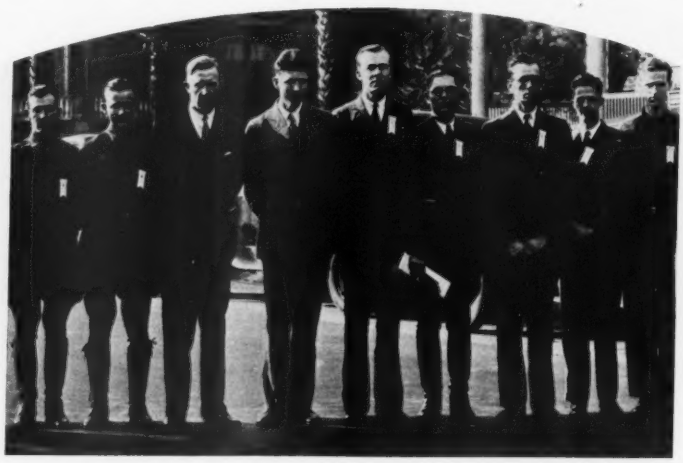
With Ernest A. Sterling, of the James D. Lacey Company, New York, presiding, the Thursday morning session was devoted to the necessity of keeping fire out of the South's piney woods. E. L. Demmon, Director of the Southern Forestry Experiment Station, New Orleans, told of a number of remarkable findings in experiments conducted at the station concerning fire and forest growth. It is Mr. Demmon's belief that commercial forestry practice in the South cannot succeed without adequate fire protection. Because of fire, he said, there are today millions of acres of forest land in the South that are producing but a fraction of their potential growth of wood.

"The total damage caused by fires," he said, "is an extremely intangible quantity and dependent on so many contributing factors that precise dollar and cents loss figures can never be arrived at exactly. There are many advantages, however, in having a basis for computing damage, and the Southern Forestry Experiment Station's fire studies should result in such a basis."

One of these studies at Urania, Louisiana, Mr. Demmon pointed out, so graphically presents the effect of fire on tree growth, that the results have been widely used in educational work in many parts of the South. Two plots of fifteen months' old longleaf pine seedlings were fenced in 1915; one plot was burned over each winter, the other protected. Observations were made at intervals on the survival and growth of these pines. At the age of ten years the average sapling on the burned plot was less than one-half as tall as on the protected side. The difference in volume growth is much greater, the burned trees showing considerably less than half of the volume produced under complete protection.

"The growth of trees and yield of forest products," Mr. Demmon said, "are also seriously affected to the point where forest management is impracticable without fire protection. When the people realize that fires lower the values of taxable property, thereby increasing the tax burden elsewhere, it is to be hoped that adequate steps will be taken to hasten the day towards more complete protection."

Harry Lee Baker, State Forester of Florida, speaking on the subject, "Fire in the Turpentine Orchard," said in part: "Where fire is concerned the turpentine operator is interested in three questions—what is there to be gained by keeping fire out of the woods?—would it be safe to abandon the practice of raking around trees and burning?—and what will fire prevention cost?"



W. C. McCormick, Regional Director of the Association's Southern Forestry Educational Project, with lecturers and motion picture operators, who gave an interesting demonstration of their work

The turpentine operator has much to gain by keeping fire out of the woods, Mr. Baker said. If more wood is produced on unburned land, it logically follows that the gum yield is correspondingly increased, as the same life processes enter into production in either case. Without fires, Mr. Baker believes that the turpentine operator would add twenty-five per cent to his revenue, with little increase in the operating cost. He believes, too, that the operator would be taking a heavy risk in abandoning the practice of raking around trees, without organized fire protection, which he declared, under the provisions of the Clarke-McNary law, is not costly to the turpentine operator.

B. F. Williamson, President of The Florida Forestry Association, explained by the use of charts the soil foods burned up in the annual woods fires in his address on "The Effect of Forest Fires on Soil Fertility." How well the forests and the soils are protected will determine the future bank account of Florida, he said. The fourth speaker on the morning program was S. W. Greene, of the Coastal Plain Experiment Station, United States Department of Agriculture, who presented a paper on "Burning the Range." The ranges of the South are burned, chiefly, said Mr. Greene, to remove the accumulation of dead grasses resulting from the heavy growth of the southern regions.

Dr. David Fairchild's address on "The Importance of Preserving Portions of the Florida Everglades," gave the meeting an aesthetic as well as an exotic flavor, and featured the afternoon session, at which Ovid M. Butler, Executive Secretary of The American Forestry Association, presided. Dr.

(Continuing on page 253)

The Great Falls of the Potomac above Washington and the wooded shores which will be safeguarded by the enactment of park legislation now under consideration

Park Futures in Washington

By CHARLES W. ELIOT, 2ND

National Capital Park and Planning Commission

WHEN the plans of the National Capital Park and Planning Commission are carried out, parks in and around Washington will include areas with some of the most interesting and important scenic, historic, recreational and inspirational values in the entire country. The Cramton Bill, which will be reintroduced in the new Congress, is intended to carry out a program of park acquisition based on these plans.

The National Capital was located by George Washington between the arms of a great Y formed by the Potomac and Anacostia Rivers, on reasonably flat ground in the midst of rolling and rough country. At the base of the Y, some miles south of the White House lies Mt. Vernon, the home and burial place of the first President and perhaps the finest example of domestic architecture of the Colonial period. Between the city of Washington and the home of Washington, Congress has authorized the construction of a memorial highway which is to be built along the river, through historic Alexandria and past Fort Hunt, and completed as part of the celebration of Washington's 200th birthday in 1932.

Across the river from Mt. Vernon, on a bluff commanding a fine view up the long straight stretch of the river to the Washington Monument, lies Fort Washington, a most picturesque century-old fortress with old barracks, portcullis and ramparts that never fail to stir the enthusiasm of artists and architects. Some day it is hoped that one will be able to drive down to Mt. Vernon on the Mt. Vernon Boulevard and then cross by ferry or bridge to Fort Washington, and return to the city on another river parkway along the Maryland shore past Fort Foote on the bluff opposite Alexandria, and so within the District of Columbia along the Anacostia ridge and close by the earthworks of Forts Greble and Carroll. A bridge over the Anacostia River at the north end of Bolling Field would connect this parkway with South Capitol Street, leading straight to the "Congress House" as L'Enfant called it, or across to the War College and along the waterfront to the Tidal Basin and the famous cherry blossoms.

Through the valley runs the thread of shining water that is the Old Chesapeake and Ohio Canal, with its picturesque towpath and overhanging trees

At the Lincoln Memorial, the great axis line on which the Avenue of the States, the Capitol, the Mall, Monument, Reflecting Pool, and Lincoln Memorial all fall, will divide—one branch crossing the river by the new Arlington Memorial Bridge to the Lee Mansion and Arlington Cemetery, and the second branch turning northward along the river to Rock Creek and the Upper Potomac.

The western or left branch of the Y, which expresses the drainage system of the Washington Region, is the valley of the Upper Potomac to Great Falls. In contrast to the broad lake-like character of the lower Potomac, the upper valley is an area of cliffs and palisades, cataracts, rapids, and contrasting pools. Through the valley there also runs the thread of shining water that marks the abandoned Chesapeake and Ohio Canal with its overhanging trees, picturesque locks, and wild flowers along the tow path. It is not yet too late to rescue the old canal and put it to recreational uses.

The valley of the Upper Potomac is noted not only for its scenery but also for its scientific and historic interest. The botanists, ornithologists, biologists, geologists and ecologists have indicated the valley as being of special importance for unusual combinations of plants, soils and bird or animal life. Cabin John Bridge, carrying the Washington Aqueduct, was long famous as an engineering wonder, and at Great Falls the visitor can still see the impressive locks of the old Patowmack Canal which are said to have been constructed under the supervision of George Washington.

The preservation of the existing beauties of these lands along both sides of the Potomac from Mt. Vernon to and including Great Falls, would be safeguarded under the provisions of the Cramton Bill by the establishment of the George Washington Memorial Parkway. Toward this project Mr. Cramton suggests that the Federal Treasury contribute one-half the cost, the other half to be contributed by the States of Maryland or Virginia, or subdivisions thereof, or by private persons.

The Eastern Branch, or the right branch of the Y, is the Anacostia River along which parks are already being developed in connection with reclamation of marshes. Near

The program includes a great parkway encircling the city and connecting the sites of the forts of the Civil War. This is a view of the monument at Old Fort Stevens

the District of Columbia line, next to the river lands, the Department of Agriculture is establishing a National Arboretum. Beyond the District Line it is hoped eventually to extend the park along the open valley with a grade separated parkway leading to Baltimore, similar to those established in Westchester County, New York.

Two branches of the Anacostia River beyond the District of Columbia—Northwest Branch and Sligo Branch—are considered by the Park and Planning Commission to be specially deserving of consideration in making up projects for the future Regional Park system. The Northwest Branch flows through a very rugged terrain with many minor falls and rapids near the chief of which the Roosevelt Camp of the Boy Scouts has already been established. The valley of the Sligo is receiving the attention of the Maryland-National Capital Park and Planning Commission which has prepared a special project for parks along the creek.

The Gorge of the Potomac. The upper valley is an area of cliffs and palisades, cataracts, rapids, and contrasting pools and is noted for historic and scientific interest

Other important regional park projects included within the provisions of the Cramton Bill are the extension of Rock Creek Park into Maryland and the preservation of the beautiful valley of Cabin John Creek. Rock Creek Park within the District of Columbia now includes over one thousand acres. The National Capital Park and Planning Commission was specifically given the job of "safeguarding" the flow of water in Rock Creek when the Commission was set up by Congress and can see no better way of accomplishing this purpose than the retention of lands along the creek in open meadows and woods with natural springs and drainage.

Within the District of Columbia the important park projects now before Congress have been estimated to cost approximately sixteen million dollars if purchases are made within the next five years. The program on which this estimate is based would involve a system of neighborhood recreation centers for adults as well as children's playgrounds. A distributed system of such centers would cost approximately six million of the sixteen sought. The remaining ten would be divided among projects to complete the existing Rock Creek Park, to protect the shores of the Potomac within the city limits, and to provide for the retention of some of the more beautiful natural valleys with a saving of storm water sewers.

Congress has already authorized the construction of a great memorial highway connecting Mount Vernon, the home of Washington, with the Capital City

Artists of The Outdoors

Alfred Hutty, Master Etcher

By Lilian M. Cromelin

Fourth of a Series of Sketches of Some of America's Most Outstanding Artists Whose Work Expresses Their Love and Understanding of the Forest and Creatures of the Wild. . .

"Hill Country"

OF THIS all-American artist, Birge Harrison has said: "We have rarely in America produced an artist so sensitive to all the possibilities of line and so gifted in its use as is Alfred Hutty. His sense of form and of direction is indeed almost infallible. He has made good his claim to title of 'master.'"

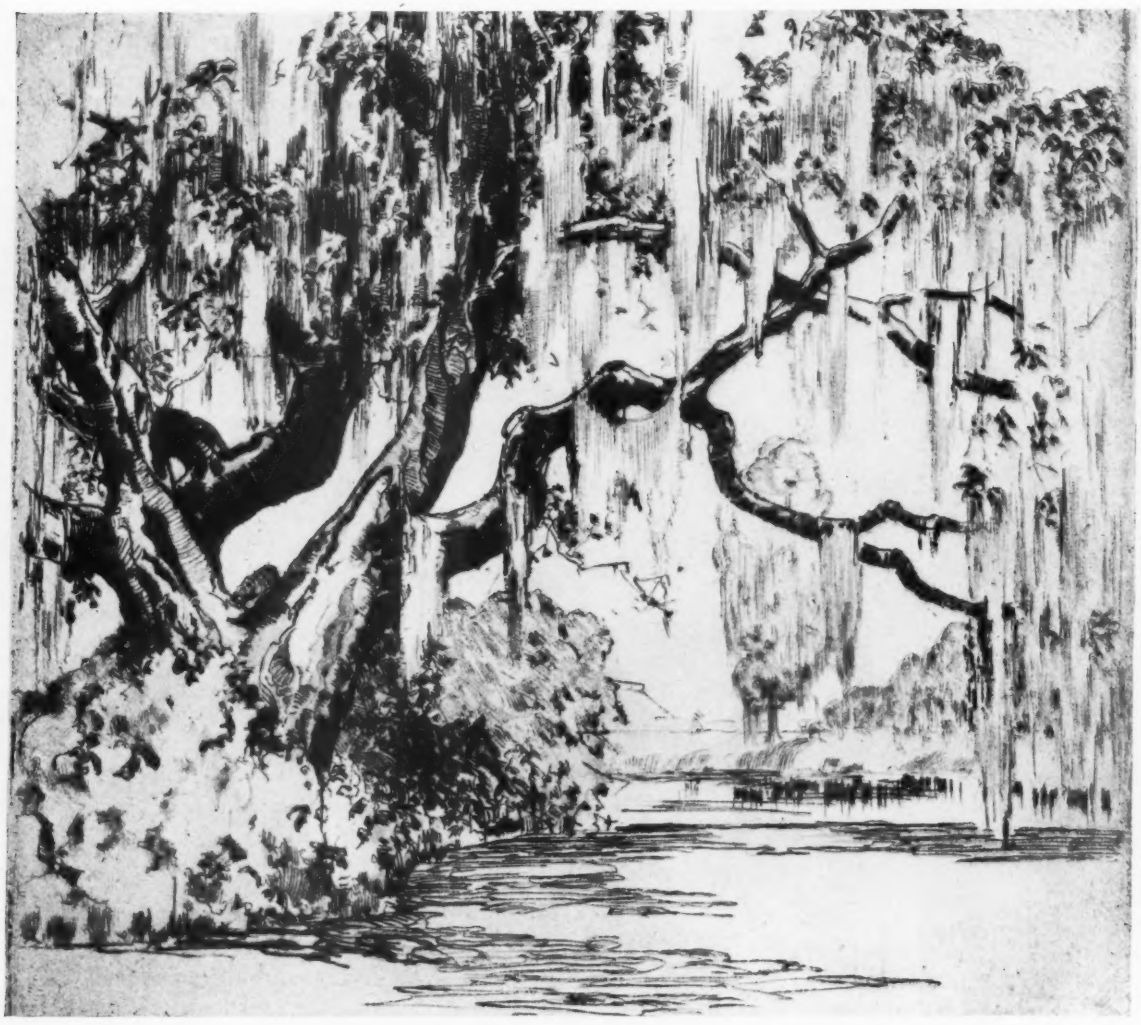
Truly a poet of line and color, Hutty has won world-wide recognition because of his versatility in media—using with equal facility the palette in oil—water-color, pencil, and pastel, and the needle in etching on copper plate. But it was through his paintings that Hutty's genius was first definitely felt. Without the benefit or prestige generally attaching to European training, Hutty developed a technique all his own, based on truth and simplicity—a direct expression in glowing color of his visualization of the subject. His portraiture is deep and understanding. His reverence and adoration of nature are found in his canvases holding her varying

moods—brilliant, laughing sunshine lighting bird and grass and tree in a landscape flung wide—or the ripple of light on the bending beauty of trees as they bow before an approaching storm. In a group of seven Southern paintings which has been characterized, "In An Enchanted Garden," the artist has bound to canvas the very spirit of the South. This lovely group found its genesis in beautiful Magnolia Gardens, and Hutty has immortalized old Charleston in their painting.

There can be no question that Alfred Hutty loves trees, and when he entered the etcher's field, he carried the understanding born of that love to its highest interpretative form in art. England paid tribute to this gift by conferring upon him the high honor of membership in The British Society of Graphic Arts—the first American etcher to be so honored.

"At the Edge of the Cliff"

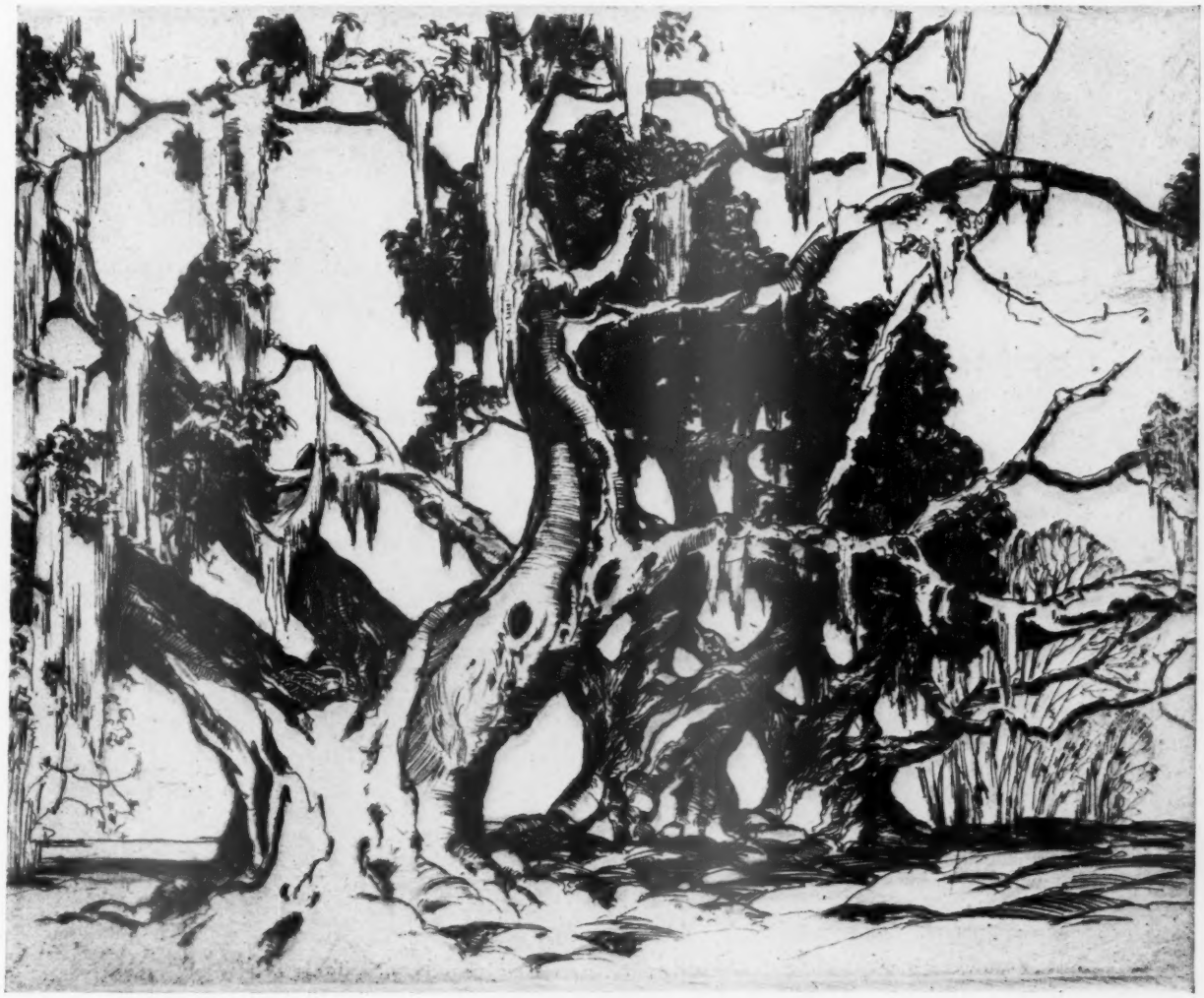
Born in Grand Haven, a little "lumber town" in Michigan, Alfred Hutty has risen to international fame despite the pressure of economic conditions and an early environment which contributed little to his success. At only fifteen years of age, the heart of this boy was so filled with the marvelous beauty and mystery of the natural world about him that he yearned to express, or set it down in some tangible form. The winning of a simple art-class scholarship at about this time gave him his opportunity, and with almost religious devotion he set about what he



In Magnolia Gardens

felt was to be his life's work. And so it proved, for rapid progress in his classes soon led to his employment as figure and landscape designer in a stained-glass-window studio in Kansas City and later in St. Louis. Pursuing this special line, he afterward associated himself with the world-famous Tiffany Studios. In the meantime, his canvases were beginning to attract wide attention. At the outbreak of the World War he entered the services of the American Forces as a camoufleur, where he applied with great success his mastery of color in the development of defensive operations through the art of camouflage. After the war he founded and became Director of the Carolina Art Association and Winter School of Art in lovely old Charleston, where for five winters he devoted much of his personal time to lectures and the stimulation of the renaissance of art in the South. His own pencil sketches, etchings and color studies of Charleston's unusual architecture, her quaint streets and negro types, her luxuriant gardens, are impregnated with the

tradition and atmosphere of the old South. Here in the South Hutty's soul expands. And the richness of his own joy is reflected in the charm and truth of his Southern etchings. Power and majesty,—the dignity of age and place, are felt in his "Avenue of Live Oaks,"—(here reproduced) while he has etched into "Magnolia Gardens" all the filmy grace of swaying moss, abandoned to the will of the sweet Southern wind, depending from the sturdy limbs of the glorious old tree. His shadows in etching are especially good and lend a speaking quality to his work in this most elusive of mediums. The lacelike effect of the delicate tracery against the sky in "Hill Country" contrasts with the feeling of strength and dependability,



An Avenue of Live Oaks

created in large measure by the shadows, in "At the Edge of the Cliff." The soft color, and the perspective in this etching is remarkable.

The Huttys live at "Broadview," in the peaceful valley of Woodstock, New York—mecca of artist folk—but spend most of their winters at Charleston, in the sunny South. The artist prides himself, not only on his American birth, but also on the fact that he has studied under American masters only. He is allied with the leading art societies and associations in America as well as the Print Society of England and the British Society of Graphic Arts, in London; has been awarded medals and other honors by outstanding art institutions and his work is represented in the permanent collections of state and national museums and institutions from coast to coast, as well as the private collections of individual connoisseurs.

FOREST PEOPLE

A Tree Planter Reclaims A Town

One Man's Efforts are Restoring to a Southern New Hampshire Township Its Lost Forest Wealth

By ERLE KAUFFMAN

ONE hundred seventy-eight years ago a handful of sturdy pioneers hewed logs from great white pines in a forest primeval in southern New Hampshire and put up a number of rough cabins. They called their settlement Richmond. Around them thousands of acres of pine trees, interspersed with hardwoods, suggested permanency and contentment, and their exultation of hope in the new country was indescribable.

Years passed, and Richmond as a town grew from a few families living in log cabins to a busy municipality of 1,400 inhabitants. Fourteen water power mills turned out lumber, barrels, furniture, shooks, clothes-pins, mop handles and many other products of the forests. More years rolled by, and gradually the wheels of the mills ceased to turn, and the population of Richmond began to dwindle until today it is less than 300, with but fifty-eight active men in the thirty-six square miles of the township. What happened to this thriving town? The same thing that has happened to so many young municipalities dependent upon the forests for existence. The forests were cut clean, the water supplying power for the mills was reduced, and the rich soil that once had been so productive fell an easy victim to erosion and waste. Richmond, the growing town, suddenly became dormant, a shadow of its former self. The pine clad hills and valleys gave way to grey birch and ironwood, cherry, and poplar. Legions of indifferent woods rose up to cover the scars of a once thrifty land.

Ralph L. Morgan, tree-planter and forest protectionist, in his white pine plantation at Richmond, New Hampshire, the town he is restoring by planting trees. This tree grew forty-two inches in a single season

This was the somewhat bleak picture Ralph L. Morgan of Worcester, Massachusetts, saw when he came to the township of Richmond a few years ago. It was a vision that deeply concerned him, for he had, when a boy, played in the shade of great trees that were Richmond's and fished the clear, swift streams. He viewed the depression that had settled over the community with grief, no doubt, but not without hope. Mr. Morgan had

At one time Richmond's wealth lay in her great virgin forests of white pine. When these were cut clean, however, the town became dormant, the mills shut down, and the population dwindled. Today, these pine forests are being restored, and the town is looking toward new prosperity

long been interested in the conservation of the nation's natural resources, and it was this interest that gave him his great dream.

He visioned the water power mills restored to their former prosperity; hundreds and hundreds of acres of pine trees covering the deforested hills and valleys; cool, clear streams following water courses long dead; the return of the natives to the community. He saw good roads, new prosperity, and a happy population. That was enough. He gave up active business and settled at Richmond, accumulating more than 500 acres of idle forest land on which to begin his task of restoring the wooded hillsides to forests and the Township of Richmond to prosperity.

His first act was to interest the scant population of 300 people in his activities by having professional nurserymen plant ten acres of his holdings to white, red, and Scotch pine. The entire community was invited to witness these demonstrations, and many responded. Then he organized planting crews from men of the town and continued his planting, and by the time a good portion of his idle land was set out there were few in the community who were not familiar with tree planting methods. Furthermore, a great interest in reforestation spread over the township, and property owners with idle acres began thinking in terms of planting and dreaming their dreams of a new forest. Just how deep-rooted this interest became is reflected in the 700,000 pine trees, exclusive of Mr. Morgan's, that were planted by these property owners up to 1928. Add to this the many thousands of trees he has set out on his own land, and the restoration of this little New Hampshire town by simple forestry practice appears to have ceased to be a dream and is an actual happening.

But while the property owners of Richmond, with the knowledge they had gleaned by planting and from the demonstrations given by professional nurserymen, could band together and set out their trees at a very small cost, the question of the cost of the young transplants themselves loomed black on their horizon. Seven hundred thousand young pine trees cost money, not a great deal, it's true, but there were only twenty-seven interested owners in a township of thirty-six square miles that prosperity had long since passed by. There were taxes to pay, schools and roads to maintain, and women and children to feed and clothe. There was not surplus enough to purchase 700,000 young pine trees. But Mr. Morgan's vision of wooded hills and prosperity was not to be marred by this. He planted seed beds, with great care, and started a small nursery. The seeds were planted in 1924 and in the spring of 1926 between 300,000 and 350,000 seedling trees were transplanted in the nursery. In the spring of 1927 these trees were given gratis to any resident in Richmond Township who agreed to plant them on his land. In the spring of 1928 another crop of seedlings was offered under the same conditions. For the planting

Richmond, as it appears today, with but fifty-eight active men in the community. Before its forest wealth had disappeared, it supported a population of 1,400

season of 1929, more than 300,000 seedling pines will be offered to the property owners.

While it appears that the planting of trees is at present the major part of Mr. Morgan's project to restore Richmond Township, it is by no means the major part of his ultimate plan. Trees must be planted, it is true, on these barren and idle acres, but in so doing a widely growing interest outside of planting has swept the community. The natives have come to realize that care and protection of their young forests are as important as planting them. Too, this realization has spread to the remnants of the old forest which remain. Under Mr. Morgan's direction many experiments are being conducted. He has attempted thinning in mixtures of hardwoods and conifers, taking out birch, cherry and poplar in favor of the straight, slim pine. In many places pruning methods have been employed, and experiments have been made to overcome certain forest insects, chiefly the pine weevil. In his pine plantation, white, red, and Scotch pine grow side by side so that their growth may be observed and comparisons made. He is agitating adequate taxation of land devoted to the growing of trees, and is carrying his fight throughout the entire state.

He is drilling the men of Richmond in fire-fighting methods, and has organized fire crews. As a result the town has installed fire pumps, and ten roadside boxes filled with tools. On his own property he has equipped a fire truck and erected a huge siren which summons the townsmen at the first sign of smoke. In fact, so determined is Mr. Morgan to prevent loss from fire, that he has designed a new fire pump for use in the woods. It is light and efficient, he claims, and avoids the handicaps usually found in commercial pumps. This new pump weighs 350 pounds, is five feet long over all, twenty and three-quarters inches wide, and thirty-two inches high from the ground. The pump is of the centrifugal type with three-sixteenths of an inch clearance, which permits the pumping of sandy or muddy water without injury. It has a capacity of 250 gallons a minute. Four one and one-half inch outlets are provided. Maximum pressure is 180 pounds.

But the greatest part of Mr. Morgan's dream was realized last year with the establishment of a town forest of 846 acres. This was brought about by his continued effort to interest the people of Richmond in forestry, and by their readiness to accept his teachings and policies.

"There is wealth ahead and secure investment in forest plantations," Mr. Morgan explained. "A few acres of Richmond's hill land planted to forest trees will grow, in time, into valuable timber, for New Hampshire timber crops are profitable beyond the belief of people generally. We have the land, labor markets, and transportation. Agriculture is not for us, for less than five per cent of our land can be classed as average. Our future can be bright only if we regrow our forests and become again a forest center. Forests, if taken care of as valuable assets, will support in Richmond more people than ever dwelt here before."

Maple—"Ambrosia of the Gods"

(*Continued from page* 211)

dition, and looking to the future of the industry a higher rate of tariff is being contemplated.

The question has been asked of the writer over and over in these days of keen food interest "What is the value of maple syrup as a food?" After paying a visit to Dr. Jones of the Department of Agriculture, who is a vitamin expert, the following opinion was added to the current knowledge. Doctor Jones says: "Maple is important as a food both because it is an energy builder and because *it stimulates interest in other foods.*" Apropos of this statement comes another boost for maple syrup and sugar from Dr. Elliott P. Joslin of Boston. Doctor Joslin in a lecture before the Harvard Medical School on devitalized foods informs us that the reason why farmers and their families in certain localities were and are able to perform two to three times the amount of actual work done by other workers is because of "maple syrup and maple sugar fresh from nature's own storehouse." This substance, gathered as it is by the leaves of the maple from the air and sunshine throughout the previous summer and autumn and stored in the sap of the trees, brings to our table one of the two most natural forms in which sugar can be taken into the human system.

The place of maple in the child's diet is an important one. In this connection an interesting comment is made by Dr. R. J. Goss of Wilder, Vermont. Doctor Goss is experimenting with tubercular children and those afflicted with rickets. He says that maple sugar is the only sweet other than honey, so far as is known, which contains the bone-building elements of malate and phosphate of lime.

It is a far cry from the first "sugarin' off" party of Moqua, the Indian Squaw who discovered that the sweet sap from the maple tree could be converted into an edible substance for her chief, to the "sugarin' off" parties held in some of our larger cities when everyone gathers around the festive board in evening clothes to eat the delicious maple wax on ice and nibble at sage cheese. At a prominent Washington hotel where gather some of the Nation's well-known men and women, an annual maple "sugarin' off" party is held each Christmas Eve. So unique and enjoyable is this form of entertainment that it calls to mind that the little maple business dating back to the American aborigine has come into the front ranks of the well-known old industries which still survive. Maple was on the menu of the first Thanksgiving dinner in America and its use will last as long as Thanksgiving Day itself.

In words something like this there comes from the *Ohio State Journal* a poetic description of maple syrup:

"If one can imagine a tincture of the red bird's cheery whistle, the delicate and elusive scent of the first anemones, the breath of the first warm breeze wafted gently across fields but yesterday white with the snows of winter, and anything else of the kind, all in one glistening amber drop, he will have a faint conception of what maple really is. It makes us feel that the world is very beautiful and the outlook very bright indeed."

The Swede and the Bear

By S. R. Woods

WE SPRAWLED in the shade of ancient spruces, beside a grass-rimmed spring and smoked our evening pipes after a hard day's job of trail location, on the upper Wildcat creek in the northern Cascades. Forest Ranger O'Neil waved his hand toward a little, ramshackle log cabin nearby.

"They tell a pretty exciting story about this cabin," he said lazily. "It seems that some years ago, a long, lank, hungry-looking Swede settled here in the fall, intending to trap during the winter months.

"One mellow evening in October, the Swede was out a short distance from the cabin when a bear—he looked like a grizzly—took after him. The Swede didn't waste time but made a bee-line for the cabin. His long legs looked just like a gigantic pair of shears working. He went ripping through bushes and straddling over logs that at any other time he couldn't have cleared with a vaulting pole.

"The bear was right behind and gaining every jump. So the Swede speeded up and by the time he reached the cabin and headed around the corner for the door, he had on a full head of power—the throttle was wide open. At this stage he glanced back over his shoulder to see how the bear was coming, and when he again looked to the front—lo and behold, he had passed the door!

"To turn back was courting a finish, so he put his mind to work. I don't know which he was doing the faster, thinking or running, but anyhow, he decided to keep up his pace and circle the cabin, and trust to better luck on the second lap. He was desperate in his haste—no doubt about that. He forced the speeder up another notch or two and with some strain on his steering gear, shot around the next corner in a cloud of dust.

"The bear wasn't expecting such a sudden change, of course, or his steering gear must have been out of order, for he couldn't make the turn at the corner. Consequently he did a tangent off into a canyon. Before he could slow down enough to turn around he was so far away that he must have figured out that the chase was hopeless so far as he was in it.

"But the Swede's mind was set on making time, and he didn't miss it. The lint was fairly popping off his shirt as he turned the corners. But over-anxiety was his undoing on the second lap. He was traveling so much faster than he usually did, that his befuddled brain couldn't keep up the pace set by his legs and before he realized it, the door was behind him again.

"From then on, there was only a blur where the mind of the Swede should have been. The laps were now being reeled off so fast that he could hear and feel the air suction behind him. This, he thought, was the breath of the bear, and he tried desperately to elevate the throttle one more notch. Well, after about the third trip around the dust was so thick that he couldn't even see where the door was. So 'round and 'round he went. How long, I don't know; but they say that never after that was this Swede able to walk in a straight line. He had so sprung his steering apparatus that he could only travel in circles."

The Swede speeded up, but the bear was right behind and gaining every jump.

Forward Views of Cabinet Officers

Progressive Policies Enunciated by Official Arbiters of Park and Forest Development

IN STATEMENTS to The American Forestry Association shortly after they took over the duties of their respective offices, Arthur M. Hyde, Secretary of Agriculture, and Dr. Ray Lyman Wilbur, Secretary of the Interior, under the Hoover Administration, expressed briefly their convictions concerning the functions of their departments in connection with forest conservation and National Park policies.

"An adequate public program of forestry," said Secrretary Hyde, "looking to the provision of future wood supplies and the preservation of other forest values is essential to the general welfare. One of the large constructive tasks of the Department of Agriculture is to advance the development of such a program. I shall use my best effort to continue the progress that has been made by the Department under my predecessors in bringing about better care and use of our forest resources. The problems involved have many relationships with the whole problem of agricultural development and agricultural land use."

Secretary Hyde, a native of Missouri, served his State as Governor from 1921 to 1925, and has long been identified with the Mississippi Valley Agricultural movement. He was graduated from the University of Michigan in 1899. In his statement to the Association Secretary Wilbur said: "Our great National Park system is primarily of value to our country because of the preeminent inspirational and educational values inherent in varying degrees in the individual members. The standard for the creation of a National Park is a high one and it must be maintained by the exclusion of scenic areas possessing merely local appeal and not having the essential element of national interest. The preservation of their natural wilderness state is vital, so that the National Parks may continue to serve their great purpose in the education, health, and enjoyment of our people."

Harris and Ewing

HON. ARTHUR M. HYDE
Secretary of Agriculture

Harris and Ewing

HON. RAY LYMAN WILBUR
Secretary of the Interior

Secretary Wilbur left his post as President of Stanford University, California, to accept the Cabinet portfolio. For many years he has taken a leading part in park and conservation matters in California and in the nation. He was one of the original organizers of the Save-the-Redwoods League when it was founded in 1918, and at the present is still an active member of its Council.

EDITORIAL

Judging Park Values

IN the closing days of the 70th Congress the House and Senate passed a measure to establish the Ouachita National Park in the State of Arkansas. President Coolidge withheld his approval.

This action of the Chief Executive was most significant. The reasons which actuated the President are not a matter of public record, but it may be inferred that the high character of our National Parks so carefully builded by Stephen Mather, and upheld by the administrative pronouncements of various Secretaries of the Interior, notably Lane, Payne, and Work, has received executive sanction. In the absence of a legal definition by Congress of the policy which should govern the establishment of National Parks, the lack of approval of the Ouachita bill marks a precedent of importance in the maintenance of the National Park system. Until Congress decrees otherwise, there is now executive sanction for the administrative policy of the Interior Department. Proposed National Parks must illustrate expressions of natural phenomena of such exceptional type as to warrant Federal control for their preservation for the enjoyment and education of the whole people. As pointed out by Dr. John C. Merriam, the great natural volcanic phenomena of the Yellowstone, the uniquely inspiring creation story of the Grand Canyon, and the majestic natural features of the Yosemite, best exemplify the national type of park.

Measured by these criteria the proposed Ouachita National Park failed to qualify. The fact, however, that the Ouachita measure so readily passed both branches of Congress in the face of the protests of an informed minority led by Colton of Utah, Chairman of the House Public Lands Committee; Cramton of Michigan; Temple of Pennsylvania, and Douglas of Arizona, should be well pondered.

The mistake should not be made of branding the Ouachita bill as a "pork-barrel" measure. It is not "pork" but popularity, paradoxical as it may seem, that endangers the structural soundness of the national park system. For it must be recognized that the lay public looks upon these Federal reservations merely as "bigger and better" playgrounds than those at home. Did not Congress in 1872 establish the first national park—the Yellowstone—as a "pleasuring ground"? Did not Secretary of the Interior Lane in 1919 widely advertise the national parks as the "people's playgrounds"? Unhappily this slogan blanketed the sound observation embraced in Director Mather's first report of 1916 that: "The fostering of recreation purely as such is more properly the function of the city, county and state parks, and there should be a clear distinction between the character of such parks and national parks." And it will be remembered that as late as 1925 well-meaning friends of the national parks stoutly asserted that the use of these reservations for recreation was a primary and exclusive function.

It was then only natural that the Ouachita proposal should receive widespread support in Congress. The majority but reflected general public opinion and voted for a measure which seemed on its face to promote the public demand for recreational facilities and opportunities for outdoor enjoyment. Many members were frankly puzzled that there should be opposition to the establishment of a type of Federal reservation so enormously popular elsewhere throughout the country.

This confusion of thought, it should be said, has not been confined to members of Congress and the lay public. There has been divergence of opinion among the specialists themselves. It is only within the past three years that the conception of national parks has been lifted to a higher level than that of "pleasuring grounds." Dr. Merriam, notably, has emphasized the predominant place of our national parks as unique sources of inspiration and for intellectual and spiritual stimulus, and steps have been taken to translate this conception into reality. Popular appreciation can be developed, however, only through the slow process of education which in time will be reflected generally in national park administration.

The task is not alone the shaping of National Park administration to serve a higher purpose than that of "pleasuring grounds." There is the basic task of land classification for coordinated use and dedication of the units which shall make up the ultimate system of national and state parks and forests collectively to serve social and economic needs. The growing mosaic of city and regional planning must be expanded nationally before the land and its resources can fruitfully and proportionately serve the public welfare.

The form of political administration best adapted to render the service indicated by the appraisal of the land values of a projected reservation, particularly for park purposes, should not be a matter of confusion. By common consent the responsibility of municipal and State governments is recognized to provide for organized recreation and opportunities for phy-

sical exercise, relaxation, and enjoyment of nature, through the provision of parks. It cannot be assumed that provision for recreation is a primary function of the Federal Government, otherwise there would be an unwarranted transgression and duplication of municipal and State duties. Recreation is properly, however, a coordinated land use on the National Parks as on the National Forests.

Nevertheless the popular conception of national parks as the "people's playgrounds" permitted the protagonists of the Ouachita National Park to pass the measure through Congress on the plea that the people of Arkansas and the surrounding region needed this reservation for recreation. It mattered not that the value of the Ouachita area to the people of the whole country could not be shown. The case rested on the assertion that this region was *entitled* to a national park—a playground. The fact that the Forest Service provides recreational facilities as a coordinated land use on the Ouachita National Forest, and is prepared to expand these facilities as demand and funds permit, was ignored.

Doubtless there will always be Ouachita Park projects. There are twelve similar proposals awaiting action in Congress. Fortunately there is a growing tendency to defer to the judgment of the experts of the National Park Service. If, however, Congress is unwilling to accept the judgment of administrative officials, it might be persuaded to establish a body comparable in function to the Fine Arts Commission.

Until this whole question of land utilization for National Parks, the governing principles and objectives, and their relation to other land uses and the political responsibilities of the State and the Federal Government can be lifted to a higher level, there will always be danger of degradation to the whole park system, State and Federal.

Pollyannas or Pushers?

AFTER the passage of the several laws which form so much of the foundation of our present national forest policy, foresters and conservationists in general rejoiced over what seemed an end, or at least a respite to the need of appearing annually before Congress to plead for appropriations.

The Clarke-McNary law laid out a program for forestry development through cooperation between the federal government and the several states and individuals. Similarly the McSweeney-McNary law pointed the way for the development of a comprehensive scheme of forest research, backed by a carefully considered plan. Every effort has been made to set this clearly and convincingly before the members of Congress, yet in no case has the full authorization been granted. In several instances appropriations approved for the coming year have been far below the needs of the accepted program.

The burden of idle forest lands is nation wide and becoming annually more acute. Its partial solution through federal ownership of a considerable portion of our forest area in the East, as well as in the West, has received recognition in the McNary-Woodruff law. This law authorizes the appropriation by Congress and expenditure by the National Forest Reservation Commission of two million dollars during the present fiscal year; three million dollars for the fiscal year beginning July 1, 1929, and three million dollars for the following fiscal year. Three years is as far as the law attempts to go.

From a casual reading of the bill Congress appears to have determined to appropriate eight million dollars during these three fiscal years for the purpose of acquiring forest lands. Yet this is not the way either the Bureau of the Budget or the majority of the members of Congress interpret the law. General Lord, Director of the Bureau of the Budget, refuses to consider it as in any sense obligatory—and apparently Congress upholds him in this opinion.

During the present fiscal year the two million dollars authorized in the law were appropriated. But it was grudgingly given and handed out piece-meal. The regular Agricultural Appropriation bill for this period carried one million dollars, and the other million dollars was included in the first deficiency bill. This latter sum was used entirely for the purchase of the Waterville tract in New Hampshire. Undoubtedly, this sum would not have been made available had the National Forest Reservation Commission not made tentative arrangements for the purchase of this particular tract before the money was actually available.

The Agricultural Appropriation bill for 1929-1930 includes two million dollars for the McNary-Woodruff items. One million dollars has been clipped from the three million dollars authorized in the law. Even this is one hundred thousand dollars more than was recommended by the Bureau of the Budget and later approved by the House of Representatives. Had it not been for the Senate, only one million nine hundred thousand dollars would have been provided for forest acquisition in the Eastern part of the country.

There is little doubt that for years we have been assuming the Pollyanna attitude. Programs have been pared to meet expectations rather than needs, and later additional cutting was necessary because the ultimate appropriations were less even than the request. If it is true that only a big program commands respect, then the problem of acquiring forest land for the national government needs to be set forth in its true proportions. Exaggerations are unnecessary, for once a program comparable with the true situation is laid out, its magnitude will command respect.

One more year will complete the program contemplated in the McNary-Woodruff law. Another struggle will be necessary to secure appropriations equal to the task ahead. So long as the present attitude persists in the minds of several members of Congress this will be no small undertaking. A strong feeling was evidenced during the past session that land purchases on the part of the national government can wait, prices may go down, and in any case the corporations and individuals may as well hold the load. The situation points to the need of redoubled effort along the lines of popular forest education.

V. The Tamarisk and the Sycamore

THE Land of Jehovah has ever been the innocent lamb of sacrifice on the altar of jealousy and avarice, each succeeding invader offering as living victims prodigious amounts of wild timber to build his engines of war which in time have come to mean locomotives fueled with charcoal. Jerusalem may be said to have suffered most from these struggles for possession, one besieger, Titus, going so far as to lay his ax to the roots of all the trees of the "orchards and gardens between hill Scopas and Jerusalem." Nor were neighboring cities safer from such depredations, as witness the disappearance of the date palm from the plain of Jericho. So reprehensible was the act of destroying "trees for meat," "for the tree of the field is man's life," that an interdiction against it was included in the old Mosaic law (*Deuteronomy 20:19, 20*), the idea being borrowed probably from the Egyptians who had a similar law.

But the Mosaic law removed all difficulties from the way of the cutting down of other trees, in the effort to counteract the steady pull exerted by pagan worship in groves and under every green tree, a circumstance sufficient for a nation dedicated to a single purpose, the worship of the one God in the beauty of holiness. They were, besides, a pastorally-minded people (*Exodus 34:13; Deuteronomy 12:3; 1 Kings 14:15; 15:13; 16:33; 2 Kings 18:4; 23:14*).

The "thick trees" mentioned so many times are seen in isolated stretches, but they are not numerous. The stems of these trees grow well apart and have no particular distinction as to height and scarcely any brush, the Forest of Sharon, however, being said to have had an undergrowth within recent time.

Two good reasons, these, invasion with subsequent destruction of trees and a religious war against them, would seem adequately to account for their absence from the land, yet to them are added torrential rains, uprooting and rushing everything before them, fire, and the marauding goat to complete the desolation, without mentioning the charcoal seekers who for thousands of years have ravaged the woods.

The custom of burning a clearing for farming purposes was prevalent in the wooded regions of Palestine in Biblical times, "the land is as the garden of Eden before them, and behind them a desolate wilderness; yea, and nothing shall escape them. . . . The fire hath devoured the pastures of the wilderness, and the flame hath burned all the trees of the field" (*Joel 1:19; 2:3*); "as the fire burneth a wood, and as the flame setteth the mountains on fire" (*Psalms 83:14*).

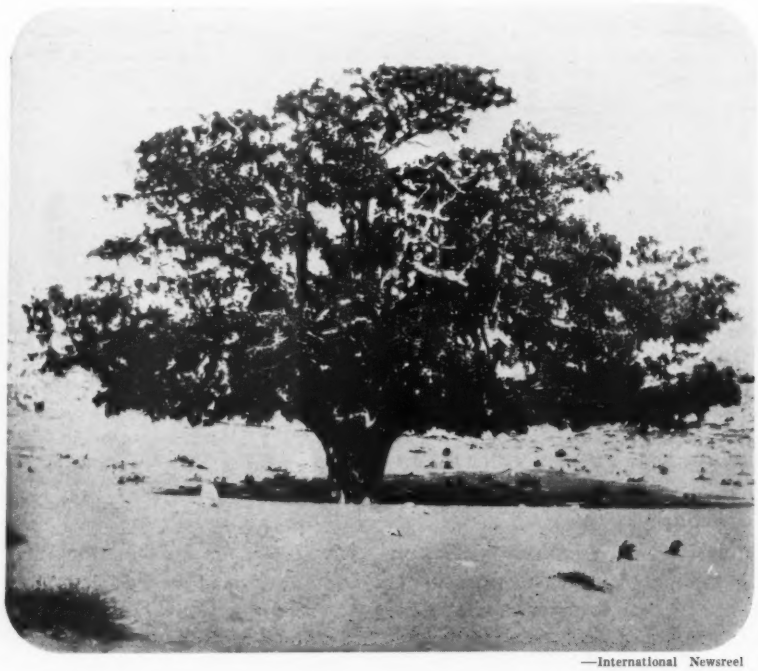
One of these clearings where fire got out of bounds lies between Safed, which is northwest of Lake Tiberius in Galilee, and Jebel Jermuk. The top soil has been completely washed away and whatever of brushwood gains headway sufficient to survive—dwarf oak, terebinth, pine, myrtle, wild olive, wild fig, juniper, and other species—is worthless without the rich alluvial soil to encourage larger growth.

For centuries the goat has been allowed to roam unmolested and to eat the young twigs and leaves as they appear above ground, a high price to pay for milk and cheese for a few Bedouins.

The torrential rains, it is argued, would be absorbed in good order were the trees and terraces still in place, and this need is being met in many places today; but the kings of the forest are low; their glory is departed from us. never

to return until, in its recurrent flow, the ocean shall give to the land again the soil which nurtured them.

The tamarisk's pleasant shade with its minute, scale-like and graceful evergreen leaves, the pink or white flowers and myriad seeds, tiny and winged with a tuft of hairs at the point, was well known to Abraham in Babylonia, and, looking up out of a straight text, we find, "Abraham planted a grove in Beersheba" (*Genesis 21:33*). The Hebrew here is *eschol,* which, although translated "grove," is the word for tamarisk, and the wonder is where Abraham procured the seed, since they grow from seed. Always before, Abraham had found a fine tree ready to his hand under which to build his altar, but, here, he was confronted with a wilderness, so he, a shepherd of flocks, proceeded to plant a grove which he hallowed by calling "thereon on the name of the Lord, the everlasting God." A debt of gratitude we owe him surely for this one deed.



—International Newsreel

The Sycamore tree of Palestine, one of which Zaccheus climbed, gives a shade area of from sixty to eighty feet. It bears the Pharoah fig, and its wood was prized by the Egyptians for mummy cases

Of durable wood and always adaptable in the warmer latitudes as well for dry planting as in well-watered regions, tamarisk trees were usually the "groves" and "thick trees" of the Bible, those by the seaside growing higher than the usual fifteen to twenty feet, seeming to thrive better in soil with a saline admixture. One writer in the first half of the last century speaks of pitching his tent by the seaside at 'Ain el Kunterah "under the tall tamarisks." It is an interesting tree. The botanists have discovered some seventy-five species ranging from the Mediterranean region to East India and Japan, a few with medicinal properties and coloring for dyes. One species, *T. mannifera,* after a rain in springtime, drops large quantities of what is called "manna," because it resembles the description of the manna of the Scriptures, the sap escaping through punctures made by the insect *Coccus manniparus,* and it is eaten after thorough cleansing and preparing as a spread, being of the thickness and taste of honey, but not so palatable to foreigners.

Saul and his three sons were slain in mount Gilboa, and their bodies desecrated by the Philistines, and "all the valiant men arose and went all night and took the body of Saul and the bodies of his sons from the wall of Beth-shan; and they came to Jabesh, and burnt them there. And they took their bones and buried them under the tamarisk trees in Jabesh" (*Samuel 31:12, 13*).

The sycamore tree, *shikmah,* still to be found in the vales of Palestine (*1 Kings 10:27*) and extending lopsidedly across roadways (*Luke 19:4*), is not the familiar sycamore of our own Ohio river bottoms, but bears a kind of fig known as Pharoah's fig, Sycamorus *antiquorum* or *Ficus sycamorus.*

The leaves, like those of the mulberry tree, are ovate-subcordate, and grow far out toward the ends of the low, horizontal branches, especially of an old tree. In this flattened, spherical form, one of which Zaccheus climbed, the tree gives a shade area of from sixty to eighty feet, although rising in the air only fifteen to fifty feet. The wood was little enough prized in Palestine (*Isaiah 9:10*), but was much used by the Egyptians for mummy cases.

Nor is the fruit highly regarded. It is curious how the small, perhaps inch long, sallow-appearing, almost tasteless sycamore figs grow independent of the leafage, from short stems sticking up stiffly all along the trunk and limbs of older branches, one tree bearing many crops of these acrid figs that smell so like real figs. Amos (*7:14*) was a dresser of sycamore trees, which meant that he went over the tree making incisions in the bark to facilitate the growing of the budding fruit; then, after the figs were almost ripened, he went over the tree again, this time scoring the figs themselves to release the bitter juice, and, after a number of days more, he gathered them to sell—a humble occupation, for only the extremely poor ate them, or children playing along the highways, or wayfarers.

The shittah tree, or *Acacia seyal,* the true acacia tree, is usually referred to in the plural form, shittim, in the text, perhaps, from the peculiar tangle into which the tree grows, twisting and turning its branches grotesquely in every direction, also from the oddly shaped knobs of gum which form in great masses upon the bark, the gum arabic of commerce. The leaves, delicate, airy fronds, spread above this tangle

like a canopy in turn covered with clusters of feathery pink blossoms, light as thistledown and forerunning the long, twisted bean pods which hang weirdly below the branches. It is a strange sight in the moonlight, or in the gray fog which is said to hang like a pall over the "moist places of the acacias," which is the meaning of the name, Abel-Shittim, the present Keferein, referred to in *Numbers 33:49,* in the plains of Moab in that depression of the Jordan north of the Ghor and across from the plain of Jericho.

It was originally known as the shintah tree, the word shittah being derived from the Arabic *sant,* and the wood, of the Order *Leguminosa,* sub-order *Mimoseae,* a hard, close-grained, yellow-brown timber, is especially free of termites, and its present scarcity is due to its excellence for the making of charcoal.

Our common locust tree, *Robinia pseudo-acacia,* was taken into Palestine a number of years ago and is thriving as well as in its home soil, and is often confused with the *Acacia seyal* or shittah tree.

The sacred ark and the tabernacle were made chiefly of shittim wood, in accord with the command which Moses received "from the midst of the cloud" on Mount Sinai (*Exodus 25, 26, 36, 37, 38*).

Just when the apple tree became involved with us in the Garden will never be known perhaps, no hint of any such co-partnership being given in the Scriptures, and, if some are to be believed, the apple goes free in any case, leaving the honors of the field to the quince, the citron, the apricot, or the orange. *Tappuah* is the Hebrew word in these passages which has been translated "apple," and in the Arabic it is *taffuah* or *tiffah,* the root word signifying "scent."

Fragrant as it was, surely we were not turned out of the Garden for a fragrance, or was the quince at one time edible? The Arab esteemed it above all fruits, one singing that its scent cheered his soul, renewed his strength and restored his breath. The citron, a large fruit, and hard, is, like the quince, only digestible when made into marmalade, or candied, and who would care to sit under a tree of ripe citrons for any length of time? (*Song 2:3; 8:5*). Yet Dr. Royle considered the citron, with its rich color, fragrant odor, and handsome appearance, whether in flower or in fruit, particularly suited to the description in the Biblical text.

The apricot, on the other hand, is of a beautiful pale gold, fragrant, and a pleasant taste, though lacking the invigorating essence of the true apple (*Song 2:5*), and Canon Tristram contends for it as the apple of Scripture, asserting that as it was native to Armenia, and introduced into Palestine about the time of the vine, none other better satisfies the epithet of Solomon: "A word fitly spoken is like apples of gold in pictures of silver" (*Proverbs 25:11*), these pictures of silver may have been the filagree baskets so skilfully wrought by Oriental silversmiths. Yet, the orange would seem to be the true apple of gold, the very phrase "apple of gold," *taphuach zahab,* in *Proverbs,* having been the accepted term of designation for the orange by the Hebrews for centuries.

Whether the true apple is meant by the word *tappuah* or not, the fact remains that the true apple *Pyrus malus,* is, according to Bailey, native to southwestern Asia and adjacent Europe; has been under cultivation from immemorial time, and charcoal remains of the fruit were found in the prehistoric lake dwellings of Switzerland. Those who believe the apple referred to in the Bible to be the true apple, point to the apples of Ashkelon which were famous even within the last century and found to be the equal in every respect to those in America, all demands as to fragrance, color, and refreshing quality being fully met.

(*In the May issue Miss Borah will conclude her series with the Sycamine tree, the balsam and the almond.*)

—Publishers' Photo Service

Beyond the Sea of Galilee, in the mountains and valley of Moab, grew the Shittah tree, the true Acadia tree, whose delicate leaves and pink blossoms were among the most beautiful in the Holy Land. Its wood, hard and close-grained, was highly valued, being excellent for the making of charcoal

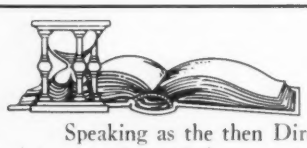
The Evolution of the Bird Refuge Bill

WHEN, on February 18, President Coolidge attached his signature to the Migratory Bird Conservation Bill, we transformed into law a measure that will unquestionably stand as the most notable achievement of the 70th Congress in the field of conservation legislation. For eight years, the measure had been before Congress in one form or another and during that period its course was always a discouragingly stormy one. The principle of the bill, namely the preservation of feeding and nesting refuges for migratory birds, was never seriously questioned, but certain provisions proposed for creating these preserves and administering them were storm centers that every year seemed to split the wild life conservationists into opposing camps. Their fights were carried into Congress with the result that year after year when Congress adjourned the bill was inevitably among those not passed. That it has at last become a law is therefore a victory worthy of comment.

As passed, the bill naturally bears the scars of battle but its evolution during ten years of controversy has not materially altered the basic idea from which it sprang. Who first conceived the idea of federal bird refuges will probably always be a moot question, but undoubtedly credit belongs to Dr. E. W. Nelson, former chief of the United States Biological Survey, for first having put the idea into definite form. In an address in February, 1919, before the National Conference on the Conservation of Game at Ottawa, Ontario, Dr. Nelson publicly called attention to "the urgent necessity of providing not only breeding preserves but wintering sanctuaries and feeding grounds" for our migratory birds. In September of the same year, Dr. Nelson urged in a letter to the President of the International Association of Game, Fish, and Conservation Commissioners that the Association bring the matter up for specific consideration at its autumn meeting. The suggestion was accepted and the proposal formed the main topic of discussion of the meeting.

In this original discussion there developed a supplemental idea that later formed one of the chief controversial features of the bill—the demand on the part of some of the sportsmen that with the setting aside of migratory wild fowl refuges should go public shooting grounds as a protection to sportsmen financially unable to belong to shooting clubs. At the same meeting the suggestion of a federal hunting license was discussed as the most feasible means of raising federal funds with which to purchase and administer the lands needed for bird refuges. Both at the meeting and immediately after it, sentiment for the measure developed rapidly, and in 1920 the Biological Survey, of which Dr. Nelson was chief, was requested to prepare a bill for introduction into Congress and the American Game Protective Association, of which Mr. John B. Burnham was President, was asked to sponsor its passage.

In 1921 this original bill was introduced in the Senate by Senator Harry S. New and in the House by Representative Dan Anthony, Jr. For a number of years, supporters of the bill, led by Mr. Burnham, worked incessantly in behalf of the measure and unquestionably laid the educational ground work which made passage of the bill eventually possible. But opposition early developed to the public shooting grounds and the federal license features of the bill. This opposition became so bitter and stubborn that the legislation, although passed by the Senate, was defeated in the House in February, 1923. During the five years that followed, the bill was redrafted several times and presented to Congress, but retention of the public shooting grounds and federal license provisions proved effective barriers to its passage. Finally in 1928, the International Association of Fish and Game Commissioners created a National Committee on Wild Life Legislation, representing the larger and more important conservation organizations of the country and suggested that the committee undertake to reconcile differences in respect to the bird refuge bill. Under the able leadership of its chairman, T. Gilbert Pearson, President of the National Association of Audubon Societies, the committee brought all groups together on a bill that made no provision for public shooting grounds and eliminated the federal hunting tax. As passed, therefore, the Norbeck-Andresen Migratory Bird Conservation Act calls for the creation of inviolate bird refuges to be created by the Federal Government with funds to be appropriated by Congress. It is to be hoped that Congress will make good with the funds authorized; otherwise the Act, historic and dramatic as has been its passage, will signally fail of its purpose.



In This Magazine Thirty Years Ago

Speaking as the then Director of the United States Geological Survey, Charles D. Walcott stressed the interest and urged the support of miners in the work of The American Forestry Association, saying:

"The mining interests of the Western States should be the most urgent in the demand for care and protection of the forests. . . . That scarcity of timber will limit mining is without question. . . . This industry demands a permanent source of supply of timber, and it hardly needs to be said that, without some such policy of forest conservation, no source of supply can be maintained. . . . Among the objects of the American Forestry Association the prevention of forest fires and the introduction of simple and effective improvements in lumbering stand preeminent. It is particularly fitted for such work on account of its membership, which includes many prominent lumbermen and nearly all the practical foresters in the United States. Its membership includes men interested in forests and forestry from every point of view, and it unites for the common object of all these different influences. . . . Its efficiency in attaining its chief end, the preservation of the forests by use, is greatly increased by the publication of its magazine, through which it reaches miners, irrigators, and lumbermen, as well as those who have a less direct interest in forest protection."

Charting Avian Airways

(*Continued from page* 198)

long been a mystery to man, but Mr. Lincoln believes the birds cross over to Europe before proceeding south, since they are seldom seen on the South Atlantic coast of the United States. Mr. Lincoln has estimated that the tern covered about 20,000 miles.

The flight was made in record time. Oliver L. Austin, Jr., an operator for the Survey, banded it on July 23, 1928, and it was found dead at Margate, fifteen miles southwest of Port Shepstone, on November 14, 1928.

Arctic terns are the recognized long distance champions of avian migration. They are seen as far north as land has been discovered, during the season of Arctic summer, and, a few months later, are found in the Antarctic. It is believed that they make a round trip of at least 22,000 miles.

A champion flier, too, is the common tern, *Sterna hirundo,* whose record that of *paradisaea* replaces. More is known about him for he nests farther south and is often seen along the Atlantic coast. One of his longest records was a flight from Maine to the mouth of the Niger River in French West Africa, a distance of about 5,000 miles, where he was found dead.

One can imagine the adventuresome trips of these game little sea birds: how they preen themselves for the flight, stretching their wings in a preliminary test of strength; how they take off from some bleak northern crag, every muscle tuned; circle once or twice to gain altitude, then turn toward the sea, as graceful and dashing and trim as the proudest of seaplanes and much more confident than any pilot of their ability to reach the opposite shore. Theirs is probably not a non-stop flight. For the terns such trials of endurance are not necessary. Perhaps they swooped down to examine ships that passed; often they must have made a landing when the water was smooth, plunging boldly into the ocean to secure a dinner of small fish. It is not unlikely that they matched their flying skill against heavy storms and their miraculous instinct of direction in high banks of fog, before ever they reached their remote destinations.

A banded robin, holding the small, non-game record, was marked in midsummer at Crystal Bay, Minnesota, and was taken a year and a half afterwards at Pachuca, Hidalgo, Mexico, approximately 2,100 miles distant, assuming that he took the shortest route, which he probably did not. In other words, he averaged about 117 miles of travel a month.

Returns from game species are larger than for non-game birds because more adequate traps have been devised for them and hunters send in many reports. Consequently the Survey, through the associations, has directed the banding of certain groups of birds—the species that are more or less easily trapped—in an effort to secure an increased percentage of returns.

Among species that have been marked by the Survey in large numbers are the common tern, the Caspian tern, herring gull, mallard, black duck, blue-winged teal, chimney swift, robin and different species of blackbirds, sparrows and finches. Returns from these have yielded many interesting facts. Common terns have been banded in large numbers at colonies on the North Atlantic Coast and traced to the mouth of the Champuan River, in Mexico, to Porto Rico, Venezuela, Trinidad, and the French West Indies. Data indicates that birds of this species, wintering on the South American coast occasionally strike out across the ocean for West Africa, since the Atlantic is narrow at that point.

Gulls, according to the evidence, while more or less nomadic, do not seem to indulge in true migratory flights. Not only do they often remain in northern latitudes during the winter, but sometimes they move even farther north. Fledglings marked in northern Michigan have been found the same season near the gulf of the St. Lawrence. That they can, and sometimes do, make long flights is proved by the fact that specimens from the Great Lakes have been found in Florida, Texas, and points south.

The largest percentage of returns has been from mallards, owing to their popularity as game birds, and these indicate fairly clearly the migratory routes followed. From Mackenzie, Manitoba, and Saskatchewan, in the Northland, the mallards fly to the coast of Louisiana and Texas, their flight extending over a wide front through North and South Dakota, Nebraska, Kansas, and Oklahoma, though the majority seem to follow the main stream of the Mississippi. Indications are that after reaching the gulf of Mexico some of the birds spread east and west. Returns have been received from states as distant as Colorado, Wyoming, Montana, and California. It is believed that the mallards sometimes accompany flocks of black ducks, flying southwest in the autumn to the Mississippi and Ohio valleys, from Ontario. The black ducks enter the United States at the western end of Lake Erie. Another airway extends southeast to the Atlantic coast, which seems to be reached about the latitude of the Chesapeake and Delaware Bays. This route, apparently, is less important, since returns along it are not so numerous.

Blue-winged teals have been banded in Ontario, South Carolina, Louisiana, Kansas, and Missouri. The ones banded in South Carolina yielded returns which help confirm belief in the existence of an important airway across from the Atlantic coast to the Mississippi Valley. From the valley the returns extended northward to the provinces of Central Canada. Birds hatched in Kansas moved south through Texas to southern Mexico, and the following year went north through Nebraska to Minnesota. This duck apparently does not care for inclement weather. It is the first to head south in the autumn and the last to come north with the spring.

Birds of prey are difficult to obtain for banding purposes and the records obtained are scant. Their movements, being mysterious, have long excited a great deal of interest, and the few returns that have come in indicate that they are true vagabonds of the sky, following their own inclinations, liv-

(*Continuing on page* 244)

Wayfarers

"He will keep you." (Timothy)

Inscription on tag found on wild goose shot by Colorado hunter, undoubtedly one banded by Jack Miner.

The strange, strange sound of many wings,
Below no creature stirred—
The silent world seemed listening
To a sound more felt than heard.

All through the night they were passing,
Winging their tireless way—
Flying as one from the Southland
Home to the Northern bay.

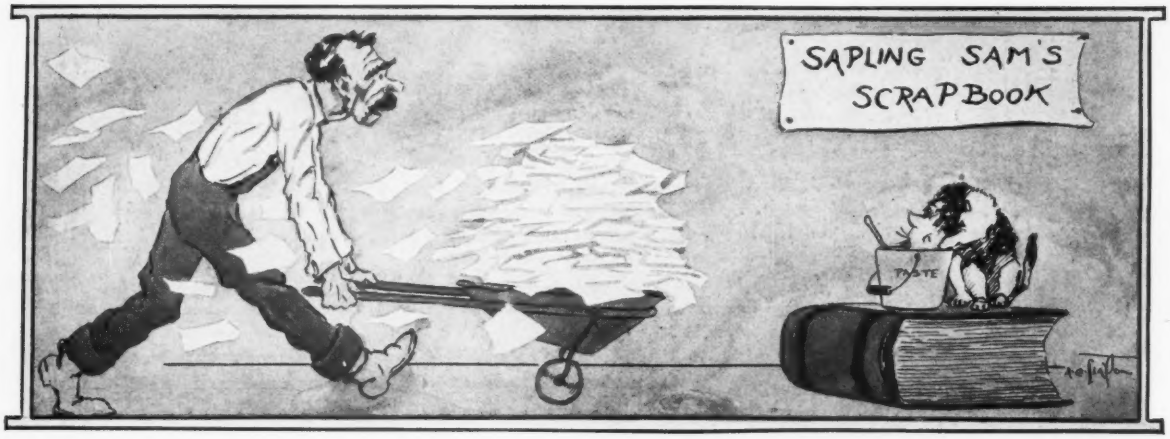
Swiftly and sure in the darkness—
Eager for home and friend,
For sheltering marsh and substance
That wait at the journey's end.

Perhaps there are some would loiter
Did note of leaders cease
To call "meek, meek," a reminder—
Of refuge, home and peace.

And some there will be, the wise ones,
Flight cannot tempt again—
No more the call from the Southland
Will lure from the peaceful fen.

All through the night they were passing—
Winging their eager way,
Flying as one from the Southland
Home to the Northern bay.

Caroline Lawrence Dier.



Imagine the Position of His Heel!

Women smokers are blamed by State Forester M. B. Pratt, says the *San Francisco Examiner,* as quoted by the *California District News Letter,* for a large part of the increase in forest, brush and grain fires in California.

"It is a proven fact that women are more careless with their 'stubs' than men," said Pratt. "A man will grind the stub into the bottom of his *ear* or in some other manner extinguish the light."

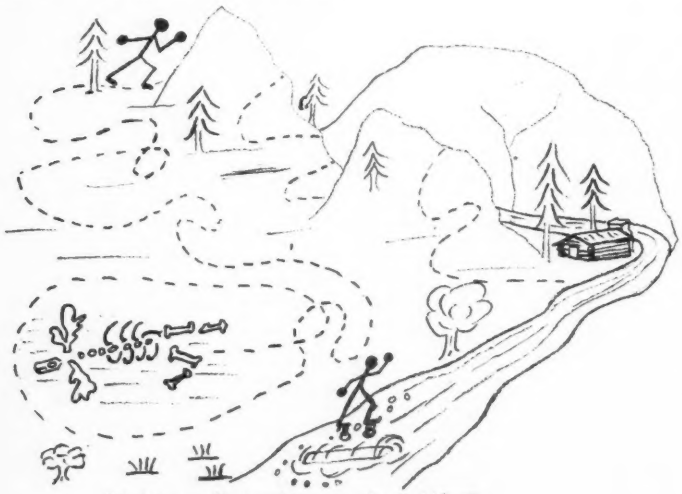
But They Might Need Brakes

A couple of cute young ladies who were visiting a western city decided that they would go horseback riding, so somebody told the *Detroit Free Press,* and the head groom asked one of them whether she would prefer the flat English saddle or the western saddle with a horn. "The flat saddle," said the young thing, "because we aren't going to ride in any traffic and won't need a horn."

New Light on Paul Bunyan

Research is taking on high speed at the hands of Paul Bunyan's biographers. Witness these new findings in the *Upper Peninsula Development Bureau News:*

"One day while out hunting with Paul we came upon the skeleton of a moose that had died of old age, and just for curiosity Paul picked out the tracks of the animal and followed the trail back to the place where it was born."



"An' he walked ashore on the bubbles."

Following this one there appear two queries and maybe some reader of this Scrapbook can help to enlighten the questioner:

"What about the time that Paul spun a log so fast that the bark came off and then he walked ashore on the bubbles? And is it true that he could ride water so rough that it would tear an ordinary man in two just to drink out of the river."

Still another correspondent recalls Paul's shotgun. "It required four dishpans of powder," he declares, "and a keg of spikes to load each barrel. With this gun he could shoot geese so high in the air they would spoil before reaching the ground."

Needs a Comma After Grizzly

"Did you ever see a grizzly bear?"
"Gosh, no; they've always got fur on 'em."—*N. Y. Medley.*

"Touch Not a Single Bough"

See the forest on these hills,
Destined for the paper-mills:

Pause amid these woodland scenes—
Here are future magazines.

There a sturdy giant falls:
That will be the new "McCall's."

Here's some timber for a dry jest
In "The Literary Digest."

See that pine against the sky?
That is "Harper's" for July.

See that hemlock in the canyon?
That's the "Woman's Home Companion."

There's a fellow cutting spruce:
Let us ask him, for whose use.

What! It's for the "Mercury?"
Woodman, woodman, spare that tree!

—Norman R. Jaffray in *Life.*

English as She is Spoke

"Albino," says a Wisconsin University student, "is an animal similar to a mule," and one of his classmates thinks that "feline" refers to a woman. Another one would substitute "drinkable" for "potent" and lick his chops in anticipation of the professor's approval.

New Chestnut Blight Theory

"Chestnut blight kills the chestnuts thus starving the tree," declared a literary college student who took one of the popular forestry courses at the University of Michigan. Another one makes this contribution, "The politicians promised timber, etc., and then used it as planks in political platforms."

Department of Science Education

Conducted by ELLIS C. PERSING

Natural Science Department, School of Education, Western Reserve University

How Teachers May Use Current Articles in This Magazine to Supplement Nature and Science-Study Textbooks Will Be Outlined in This Column Each Month by Professor Persing

THE suggestions for using the articles in this magazine will be given in a form that can be used directly by students and teachers in the upper elementary grades, the Junior High School and Senior High School.

Textbooks and courses of study serve as outlines for the science work in grades one to twelve inclusive. These outlines of essentials are necessary and it is not our plan to displace textbooks in any field of subject matter but merely to suggest a wealth of supplementary reading and visual materials which will enrich the present course and relate it to the experiences of the pupils. We are certain that the materials found in AMERICAN FORESTS AND FOREST LIFE from month to month will help acquaint pupils and teachers with the world about us and help them to keep up to date on topics of our forests and wild life.

Elementary School

Fossils—"The Park of a Million Bones," by Hi Sibley (Page 207, this issue).

Read this fascinating story of fossils; then be prepared to answer these questions:

1. What error did several prehistoric beasts make?
2. How many fossils have been taken from the pits?
3. What is being done with them?
4. What animal skeletons have been found in these pits?
5. How does the scientist explain the tremendous number of skeletons found in so small an area?
6. How are the fossils found at Rancho La Brea different from those in other places?

Forest Products—"Maple—'Ambrosia of the Gods,'" by Maude C. James (see page 209, this issue).

If you have never visited a sugar bush you will want to go after you have read this thrilling story. The pictures will help you to understand how maple sugar is made. Look at them carefully.

Can you answer these questions?

1. How was the sap gathered long ago?
2. How is this work done to-day?
3. How is the thick sweet syrup made?
4. Is maple sugar good food?
5. What are the chief maple sugar producing states?

Junior High School

Birds—"Charting Avian Airways," by Alma Chesnut (see page 196, this issue).

When studying bird migration you should not fail to read this story of how people are trying to learn the mysteries of bird life. Perhaps some member of the bird club in your region will tell your class how birds are banded. After you read the story answer these questions.

1. How are scientists trying to learn more about bird life?
2. What are some foolish legends about birds?
3. What has been the history of marking birds for study?
4. What method is used for banding birds today?
5. What kinds of birds have been banded?

Conservation—"Forest People, A Tree Planter Reclaims a Town," by Erle Kauffman (Page 224, this issue).

From this article you will learn how forestry practice helped in restoring to a southern New Hampshire township its lost forest wealth.

After you have read this story answer these questions:

1. What happened to the thriving town of Richmond?
2. What was the vision of Mr. Ralph L. Morgan?
3. How did he interest the people of the town in his activities?
4. How many trees were planted by the property owners?
5. How did Mr. Morgan obtain trees to plant?
6. What experiments are being conducted?

Forests—"Handling a Big Forest Fire," by Kenneth F. Lee (see page 199, this issue).

Here is the thrilling story of how a big forest fire is handled. When you are studying forest conservation read this interesting article and be prepared to give a brief report to the class.

1. How was the forest fire discovered?
2. How were men obtained to fight the fire?
3. Tell how the men worked.
4. What use was made of the fire pump?
5. What use was made of dynamite?

Senior High School

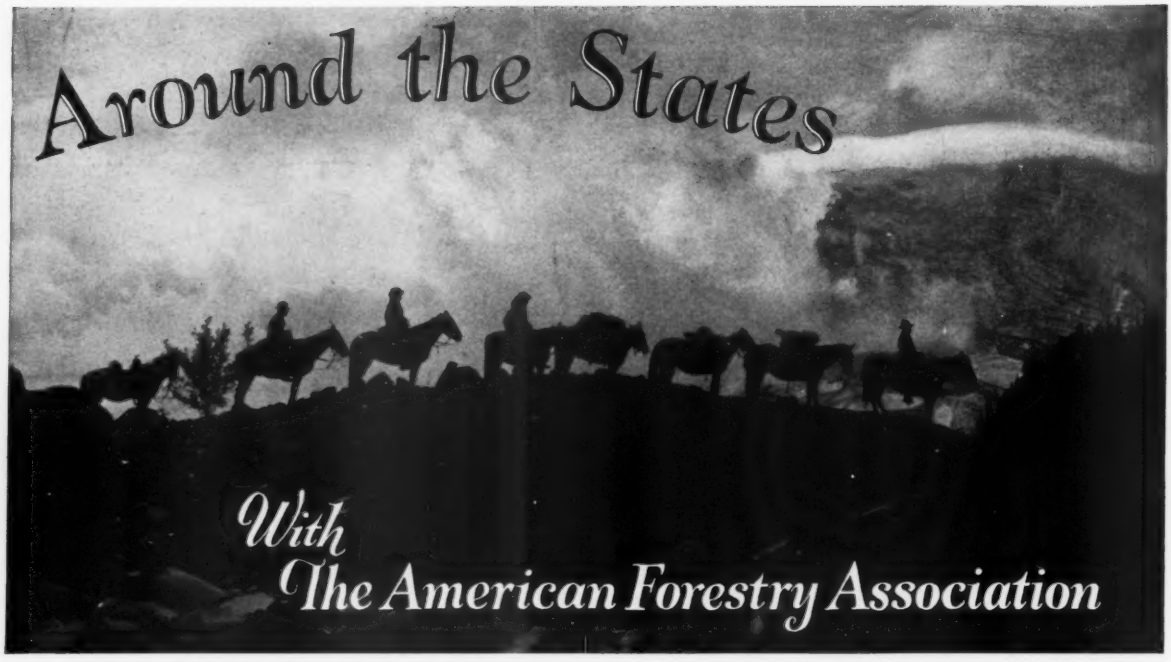
Trees—"Trees for Southern Hedges," by Harold Mowry (page 203, this issue).

People in the Southern States should be interested in the information given about hedges in connection with the study of plants for the home grounds.

"Trees of the Bible," by Adelaide Borah (see page 231, this issue).

This is the fifth article of the series that deals with trees of the Bible. Have you ever wondered what the trees of long ago were like? Here many of them are described.

1. How was land cleared for farming purposes?
2. What were the "thick trees" and the "groves"?
3. How is the sycamore of this region different from our sycamore?
4. What are the common fruit trees?
5. What is meant by "apples of gold"?



Planes in National Parks

The problem of the admission of airplanes to National Parks will be studied by a committee appointed by the Secretary of Interior following a conference recently called of representatives of all interested agencies. The committee consists of the Secretary of Interior, Horace M. Albright, Director of the National Park Service, and Representative Cramton, of Michigan.

It was brought out at the meeting that railroad transportation companies have no objection to the entrance of airplanes into the business of transporting passengers to the parks, but believe that the air transportation should be required to build their terminals outside the park at their own expense, it was stated by Carl Gray, President of the Union Pacific Railroad. Admonitions to the Secretary of the Interior to take precautions to prevent the despoiling of the beauty of the park areas were presented by George D. Pratt, President of The American Forestry Association; Robert Sterling Yard, Secretary of the National Park Association; Dr. Don Tresidder, President of the Yosemite Park and Carry Company; and Dr. John C. Merriam, President of the Carnegie Institution of Washington.

Indiana Seeks Fire Protection

A forest fire bill providing $15,000 a year for organized forest fire protection in Indiana has passed the State Senate and is reported making good progress in the lower branch of the Legislature, according to R. F. Wilcox, State Forester. Passage of this bill would also increase the forestry fund for growing trees, reforestation, and acquiring State Forests from $50,000 to $100,000 a year. This increase, says Mr. Wilcox, would acquire 10,000 acres of State forests each year, and would back an adequate nursery and reforestation program for planting millions of trees.

President Disapproves Ouachita Park Bill

President Coolidge, as one of his last acts before leaving the White House on March 4th, pocket-vetoed the bill designed to create the Ouachita National Park in Arkansas. Therefore, this measure which conservationists charge was rushed through Congress at the last moment by a political coup, ended in ignominious defeat at the White House.

First introduced in Congress in December, 1927, by Senator Robinson and Representative Wingo the bill was designed to take land from the Ouachita National Forest in Arkansas to create a National Park. The measure at once met with widespread opposition on the part of conservationists throughout the country on the ground that the region in question does not meet the standards of National Park lands and that the diversion of National Forest lands into National Parks would be a precedent threatening the integrity of the whole National Forest system.

The measure was strongly opposed by the Secretaries of Agriculture and Interior, the National Park Service, the Forest Service, many members of Congress and organizations throughout the country. The American Forestry Association took the position that the Ouachita bill was nothing short of a case of hi-jacking the National Forests in order to meet the demands of local regions for National Parks.

"Once we kneel before the political altar of carving up the National Forests to make inferior National Parks, two of the greatest conservation achievements of the American people are doomed to totter," declared the Association.

Despite the widespread opposition to the measure, it nevertheless passed the Senate on February 16, 1929, and was rushed through the House on February 27 in an effort to gain the President's signature. The refusal of the President to sign the bill is held by conservationists as an act that probably means more to the integrity of the National Park and National Forest systems than any other action during President Coolidge's term of office.

Philip P. Wells Dies in California

Philip Patterson Wells, formerly chief law officer of the United States Forest Service, and long associated with the conservation activities of the nation, died in San Francisco, California, March 12. He had recently gone to California from his home in Washington, D. C., to recuperate from a long illness.

Mr. Wells entered the Forest Service in 1906 as assistant law officer and the following year became chief law officer. He left the Service in 1910 to become counsel for the National Conservation Association. From 1911 to 1913 he held the position of chief law officer of the United States Reclamation Service. For some years thereafter he practiced law in Washington, D. C., but gave the major part of his time to conservation studies. Since that time he had been asso-

ciated with former Governor Pinchot as legal and general adviser in connection with conservation activities.

Born in Grand Rapids, Michigan, in 1868, Mr. Wells received his early education in Connecticut and Kentucky. He was graduated from Yale in 1889, receiving the degree of B. A. In 1891, he took up the study of law and in 1896 became librarian of the Yale Law School. He received the degree of Ph. D. from Yale in 1900.

Mr. Wells was the author of many articles on conservation. He was a member of The American Forestry Association, the Society of American Foresters and former president of the Connecticut Forestry Association.

New York Forestry Meeting

Advocating continued public education in forestry and more extensive planting of trees, Governor Franklin D. Roosevelt, of New York, speaking before the annual meeting of the New York State Forestry Association, at Albany, urged that forestry be steadily advanced, with the idea of dividends for the people of the future.

Francis R. Masters, of Taconic, was elected President of the Association for 1929, and Thomas C. Luther, first Vice-President.

Principal resolutions adopted urged the Federal Bureau of the Budget and Congress to give sympathetic attention to the recommendations of the Secretary of Agriculture in regard to the McNary-McSweeney and the McNary-Woodruff bills in coming sessions of Congress, to the end that the general program already approved by Congress may be put into full effect; endorsement of a concurrent resolution to remove all doubt as to the constitutionality of the $100,000 emergency fund for fighting forest fires in the State; and endorsement of bills embodying state-wide reforestation programs.

The meeting drew speakers from every part of the State, among whom were William G. Howard, Superintendent of State Forests, and Professor Ralph S. Hosmer, Department of Forestry, Cornell University.

California Favors Severe Fire Measures

Endorsement of a hazardous fire district bill, designed to check smoking and the building of camp fires in dangerous fire areas during emergency periods, has been announced by the California State Board of Forestry.

The bill authorizes the State Board of Forestry, on written petition of more than fifty per cent of the landowners in any area of not less than 10,000 acres, to designate the district as a "hazardous fire area."

During the time the district is so designated, it would be illegal to smoke or build fires in a hazardous fire area, except in camp sites created in the district by the Board of Forestry. It is provided, however, that "no regulation under this act shall prohibit or curtail the complete possession and use of any area by the owner and his authorized agents."

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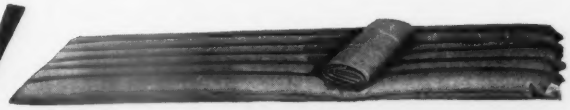

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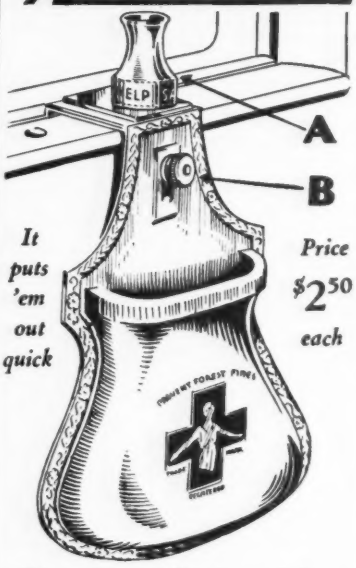


It puts 'em out quick

Price $2.50 each

Cigarette Extinguisher and Ash-Tray combined

Beautifully designed, neat, clean, convenient and may be installed in any closed car by use of telescopic adjustments "A" and "B." The Auto-Ex-Tray conforms to State laws and is the

Motorists' Emblem of Good Citzenship

Finished in Oxodized silver, Bronze or Tiffany Green—sent post-paid anywhere in United States on receipt of purchase price. Descriptive circular sent upon request. Write for selling plan in open territory.

The American GREEN CROSS
Bradbury Building
LOS ANGELES, CALIFORNIA

Don't Guess!

Measure the lumber on your Southern wood lot or forest with our specially designed

TREE-SCALE STICK
and
LOG-SCALE STICK

By the Use of These Sticks You Can Quickly Determine the Number of Logs That Can be Cut from a Given Tree and the Contents in Board Feet for Both Loblolly and Shortleaf Pine.
The Sticks are Made of Specially Selected Maple with Figures in Black and Heavily Varnished to Resist Wear.
Each Set Consists of Two Sticks in a Heavy Canvas Container and a 16-page Booklet Giving Complete Instructions for Use and Other Useful Information.

$1.00 *a Set, Postpaid*
Order from Your Extension Forester or
THE AMERICAN FORESTRY ASSOCIATION
1523 L Street N. W. Washington, D. C.

Pinchot Protests Lumbermen's Advertisement

Mr. Gifford Pinchot, former Governor of Pennsylvania, has protested against the publication in this magazine of advertisements of the National Lumber Manufacturers' Association which, he charges, are intentional misrepresentations of the forest situation. The particular advertisement against which Mr. Pinchot directs his attack was published in the February issue of AMERICAN FORESTS AND FOREST LIFE. It contained statements to show that the national forest policy, as expressed by the Clarke-McNary Act, is one of cooperation between the national and state governments, and timberland owners. It made claims as to the support of that policy by the lumber industry and expressed the opinion "that within the next decade every acre of timberland owned by private operators that is economically capable of commercial tree growing will be doing it." The advertisement concluded with a request that readers write the National Lumber Manufacturers' Association for a copy of "Reforested America," the lumbermen's reply to the pamphlet "Deforested America," prepared by Major George P. Ahern and distributed throughout the country by Mr. Pinchot with a letter charging that the lumber industry is spending millions of dollars on propaganda in an effort to forestall and delay the public control of lumbering.

Mr. Pinchot's objections to the advertisement and its publication in this magazine are set forth in the following correspondence which he has suggested be published.

Washington, D. C.
February 1, 1929.

Mr. Ovid M. Butler,
American Forestry Association,
1523 L Street, N. W., Washington, D. C.

DEAR BUTLER:

My attention has just been called to an advertisement in AMERICAN FORESTS AND FOREST LIFE entitled "Reforested America." To say that I am amazed that you should permit the publication in the official organ of the American Forestry Association of a statement of this kind is far below the truth. It contains not one but several misstatements such as "the great Associations * * * are actively promoting forestry," and that "within the next decade every acre of timberland owned by large operators that is capable of successful commercial tree growing will be doing it" (practising forestry).

You must know, as every intelligent forester knows, that these are direct and intentional misrepresentations of the situation, and have for their purpose to mislead the reader. You know, and I know, that it is utterly beyond the bounds of the remotest possibility that the result predicted in this advertisement can come about, and we both know that the purpose of including it is to produce a false sense of security.

This advertisement, in my opinion, comes within the category of the advertisements which the Federal Trade Commission, in cooperation with editors and the Better Business Bureau, is attempting to weed out from reputable publications for the protection of the public. As a member of The American Forestry Association, I wish to register most vigorous protest against publication of such misleading advertisements. If the policy represented by this advertisement is to be continued, the name of the American Forestry Association ought to be changed.

Sincerely yours,
GIFFORD PINCHOT.

February 7, 1929.

Mr. Gifford Pinchot,
1615 Rhode Island Avenue,
Washington, D. C.

MY DEAR MR. PINCHOT:

Your letter of February 1, protesting against the publication in our February issue of the advertisement of the Nation Lumber Manufacturers' Association is received. Responsibility for the publication of the advertisement is mine in that I accepted the copy.

I did not then, nor do I now, think that the Association should have refused to accept this advertisement. We published in the news section of our January issue your letter in full containing specific charges against the lumber industry. We also published in the same issue a review of Major Ahern's "Deforested America." If the lumbermen desire to advertise their answer to your charges and Major Ahern's publication, I do not think the Association should deny them space in its magazine.

It goes without saying that the Association should exercise fair censorship of its advertisements and it does. In the advertisement in question the statements made are of a highly controversial character and have been for

years. The one which you quote is particularly open to question, I readily grant, but nevertheless it is an expression of opinion subject neither to conclusive proof nor disproof, and it certainly is not the policy of the Association to close its pages to a free expression of opinion in the form of signed articles or paid advertisements.

The editorial columns of the magazine are, of course, reserved for an expression of the Association's own views, comments, and interpretation of facts as it sees them. These are, and will continue to be, given clearly and fearlessly.

Very sincerely yours,

OVID M. BUTLER,
Executive Secretary.

1615 Rhode Island Avenue,
Washington, D. C.
February 8, 1929.

Mr. Ovid M. Butler,
Secretary, American Forestry Association,
Lenox Bldg., Washington, D. C.

MY DEAR BUTLER:

I am just in receipt of your letter of February 7, in reply to mine of February 1, concerning the publication (in the February issue of AMERICAN FORESTS AND FOREST LIFE) of the misleading advertisement of the National Lumber Manufacturers' Association.

Your defense is that the organ of the American Forestry Association, established to carry forward a campaign for the preservation of American forests, ought to hold its advertising columns open for the dissemination of propaganda intended to facilitate the continued destruction of American forests. This is a totally impossible position. It represents the first case in my experience where the journal of an association founded to advance a cause deliberately allowed itself to be used to injure that cause.

A newspaper, as a quasi-public enterprise conducted for profit, may without criticism accept an advertisement, however contrary its purpose may be to the policy that is supported on the paper's editorial page. There is no such license for a publication conducted to advance a cause like AMERICAN FORESTS AND FOREST LIFE.

It is not the business of AMERICAN FORESTS AND FOREST LIFE to give circulation to the arguments of the destroyers of forests. That is abundantly attended to in the publications of the lumber trade. On the contrary, it is its business, and there is the strongest obligation upon those who conduct it, to play fair with the members who support it by keeping it true to the purpose for which it exists.

No one can contend that the advertisement in question helps or was intended to help the cause of forestry. Its obvious purpose was to assist in securing for the lumbermen who paid for it still further opportunity to continue their present destructive practices. Therefore its publication was wrong.

I invite you to publish in the next issue of AMERICAN FORESTS AND FOREST LIFE our entire correspondence on this subject.

Sincerely yours,

GIFFORD PINCHOT.

The editor takes exception to Mr. Pinchot's paraphrasing of the policy of the magazine. The advertisement in question was unmistakably an advertisement. It was on its face a reply of the lumber industry to charges made against that industry. By no stretch of the imagination could it have been interpreted as an expression of the views of the American Forestry Association or of having its endorsement. This is particularly true since the Association's own views of the situation presented in "Deforested America," were presented clearly on the editorial page of the same issue of the magazine.

Mr. Pinchot has long been a cham-

Solve the mystery of quiet waters

THERE *is* a mysterious lure in the soft ripple of shadowed waters. Let the gentle witchery of streamland lull you into understanding. Drift from sunlight into shade . . . float through moon-mellowed pools. Solve the mystery of quiet waters—in an Old Town.

You'll appreciate the graceful trimness of Old Town Canoes. They're patterned after real Indian models. Light and perfectly balanced. Durable too. Priced as low as $67. From dealer or factory.

Write today for free catalog. It shows and prices many light, water-tight models. Paddling, sailing and square-stern canoes, extra-safe Sponson models, dinghies and sturdy family boats. Also speedy craft for outboard motors—racing step planes and hydroplanes. Old Town Canoe Co., 1944 Fourth Street, Old Town, Maine.

"Old Town Canoes"

A MESSAGE TO fishermen

Regardless of conditions you are dog-gone sure of comfortable feet if you wear Bass Moccasins.
Ask Your Dealer To Show Them To You
Our Catalog also shows the complete line of Bass Moccasins for Golf
FREE Catalog on request
TRUE MOCCASINS

G.H. BASS & CO.
40 Main Street Wilton, Maine

Dan Beard Woodcraft Camp

A sign-up for the Dan Beard Woodcraft Camp is the best gift Dad can give his boy. Hiking, Horsemanship, Canoeing, Swimming, Woodcraft, and Nature taught by experts.

Indorsed by prominent Foresters, Scout officials, and noted Educators.

Write for information

Dept. B. Suffern, New York

BEYOND ALL ROADS!

ALLAN RANCH

Sun River Canyon, in Big Rockies. A Wonderful Fish, Game, Scenic Country. Mountain Lodge with Warm Springs Plunge. Pack Train Trips.

LET'S GO FOR A SPRING BEAR HUNT!

You'll Not Find a More Delightful Place!

Booklet. RALPH ALLAN, Augusta, Montana

If you do not find what you want advertised in AMERICAN FORESTS AND FOREST LIFE

Write to Service Department

AMERICAN FORESTS AND FOREST LIFE

WASHINGTON, D. C.

pion of government control of the lumber industry. His views in this respect are not shared by great numbers of foresters. The profession of forestry and Congress considered his proposals as incorporated in the Capper bill five years ago, but chose to select the principle of the Clarke-McNary Act which made the national forest policy a policy of cooperation between the federal government, the states, and the forest industries. The progress being made by this cooperative method of dealing with the forest problem is today and has been for a number of years a matter of individual and group opinion. Mr. Pinchot, it is clear, takes the stand that it has not stopped destructive lumbering, a stand that is unquestionably well taken, but the extent to which the gradual adoption of better forest practice by timberland owners is decreasing destructive lumbering and predictions as to future progress in this direction are admittedly points of personal and group opinion.

To adopt the policy which Mr. Pinchot suggests, namely to refuse to give circulation to the arguments of the lumbermen would, in the editor's judgment, be tantamount to repudiating the whole cooperative effort and to branding the participation of the lumber industry in that effort as a gesture of bad faith. Neither the editor nor the Association subscribe to that view. The membership of The American Forestry Association is made up of men and women in every walk of life. It represents public, professional and industrial interests in the forest situation. Solution of the many problems involved in that situation is still in a formative stage and calls for free discussion. The editor holds that fair play to the membership, to the cause of forestry and to the diversified interests concerned calls for an editorial policy that gives all individuals and groups an opportunity to be heard and to present their views and claims.

Southern Forestry Congress

The Eleventh Southern Forestry Congress will be held at the Roosevelt Hotel, New Orleans, Louisiana, April 4, 5 and 6. The program will include discussion on forest fire control, forest taxation, farm woodlands, and profits in timber growing. Chairman W. R. B. Hine, State Forester of Louisiana, reports that fully a dozen State Foresters have signified their intention of being there, together with a number of Extension Foresters and many owners and operators of forest properties. These include representatives of the Crossett Lumber Company of Arkansas; the Long-Bell Lumber Company; A. K. Sessoms, of Cogdell, Georgia; I. F. Eldridge, of Fargo, Georgia; Robert W. Wier, of Houston, Texas, and numerous others.

Headquarters 1929 Convention

This distinctive hotel, in the very lap of the Southland, exudes the hospitality and genteel service for which the South is famed.

A REAL DINKLER INSTITUTION

UNEXCELLED FOOD

THE BEST OF SERVICE

COMFORT OF A HOME FIREPROOF

REASONABLE PRICES

Other Dinkler Hotels:

THE ANSLEY
Atlanta, Ga.
TUTWILER
REDMONT
Birmingham, Ala.
ANDREW JACKSON
Nashville, Tenn.
JEFFERSON DAVIS
Montgomery, Ala.
THE BROADVIEW
E. St. Louis, Ill.
THE WOLFORD
Danville, Ill.

OPERATED BY

DINKLER HOTELS CO., INC.

CARLING L. DINKLER, *President* ***Dispensers of True Southern Hospitality***

New York Takes a Forward Step in Forestry

By Augustus S. Houghton

Senator Charles J. Hewitt, Chairman of the Senate Finance Committee, in January, 1927, introduced in the Legislature of the state of New York a concurrent resolution to be submitted to the people of the state to authorize creating a debt of one hundred million dollars for the reforestation of the four million acres of non-agricultural lands of the state, or, as the forester prefers to express it, of lands best adapted to silviculture. This resolution was referred to the Senate Finance Committee, taken up for consideration, but not reported because it had been introduced for the purpose of attracting attention and creating discussion throughout the state, thus paving the way for the introduction of the bills and resolution of 1928.

In January, 1928, Senator Hewitt again introduced the same resolution and Mr. Eberly Hutchinson, Chairman of the Assembly Ways and Means Committee, introduced in the Assembly a similar resolution. These were followed by companion bills in the two houses of the Legislature providing for a fact finding commission and carrying an appropriation of fifty thousand dollars to cover the expenses of the Commission. The Governor approved the bill. Thus was created the New York Reforestation Commission consisting of three senators, three assemblymen, and three outside members appointed by the Governor, with Senator Hewitt as Chairman.

The Commission was directed to make a study of conditions and a survey of the lands suitable for reforesting and to submit to the Legislature of 1929 with its report such bills as would best accomplish the purposes sought. The Commission was directed to submit its recommendations as to what financial plan was best adapted to carry on this work to its fruition.

A hearing was had at Albany on the resolution and commission bill. This was attended by many representatives of the forest products industries, forest schools, farmer and grange associations, as well as representatives of the private timber land owners and of others interested in the restoration of the forests of the state. Numerous hearings have since been held throughout the state and the Commission has found the county and town officials most eager to assist. Sections of the state were allocated to the several members of the Commission. They have made surveys of conditions in each of the sixty-two counties of the state. All the lands in areas of five hundred acres or more suitable for reforestation have been tabulated. The tabulation shows some eight hundred fifty-three thousand acres of this class of land in the state. The areas of less than five hundred acres, of which there are more than twice as much as there are of areas of five hundred acres or more, are left to the county and other political subdivisions to reforest, the subdivisions to be assisted by contributions from the state.

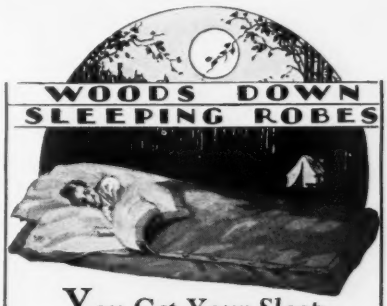
Early in its investigation and study it became apparent that it would not be possible within the time set by the Legislature to make the survey required or to formulate a comprehensive policy that would accomplish the result desired, so it has requested the Legislature to extend its life until 1931, without, however, any increase in its appropriation for expenses.

The state now operates three forest tree nurseries with a maximum annual output of thirty-five million trees. It will require eight hundred fifty-three million trees to reforest the eight hundred fifty-three thousand acres. Superintendent of Forests William G. Howard states that it will require twenty nurseries of one hundred acres each to produce the necessary trees.

The Commission, realizing that nurseries are of primal importance, has recommended to the Legislature an appropriation of $115,000, of which $100,000 shall be used in acquiring lands and their planting, and $15,000 for equipment.

The policy to be recommended by the Commission will not be confined to the part that the state will take in this movement, but will include recommendations as to the best method of encouraging and assisting the various political subdivisions of the state in creating local forests, the saving and development of the farm wood lot and of the holdings of the individual citizens.

Two bills, one carrying an appropriation of $115,000 for state acquisition and planting of forestation areas of not less than five hundred acres of continuous land and the other providing state aid to counties in acquiring and reforesting areas of less than five hundred acres, were prepared by the Commission during the winter and introduced in the State Legislature. These measures received practically unanimous support throughout the state and were passed by the Legislature early in March. As this is written they are now before Governor Roosevelt for signature.



You Get Your Sleep

MAKE camp where you like or must. You're snug at night—comfort and sleep a-plenty in your Woods Down Sleeping Robe. Rest that keeps you full of daytime vim.

Whatever the weather, Woods Everlive down from Northern waterfowl warms your bed just right. Your robe is self-regulated, in nature's way.

Constant Satisfaction

For years on end your Woods Down Robe will give you the same dependable satisfaction. "More comfort than a stack of blankets, lighter than a pair." For summer the Woods Arctic Junior. Below frost, the famous Woods Arctic. Three sizes. Open flat design, buttoning double and at foot as shown. Weatherproof underlap; hood with drawstring. Guaranteed satisfactory. Sold by leading stores. If not displayed please write to us. Prices and folder, "Comfort Outdoors," FREE.

WOODS MFG. CO., LTD.
1905 Lake Street Ogdensburg, N. Y.
In Canada, Ottawa, Ontario

U. S. HEADQUARTERS
Imported Arms, Ammunition & Parts
Mauser - Luger - Merkel Bros. - Mannlicher, - Webley - Scott, etc.
Full line American Arms & Ammunition
Springfield's Restocked to Col. Whelen's Revised Specifications
Largest stock in America of fine new Rifles, Trap, Field Guns, Side Arms, Air Rifles & Pistols. ★ Telescopes mounted. ★ Expert Repairing. ★ Send 25c in stamps for 128 page Arms Catalog.
A. F. STOEGER, INC. NEW YORK, N.Y.
509 Fifth Avenue (at 42nd St.)

BOB WHITE QUAIL
Free 1929 Folder explains planting game preserves; letters from customers, including sportsmen, clubs, game officials, etc. Delivery December to late April. Live arrival anywhere guaranteed, any quantity. *Largest producer America's BEST Game Bird.*
ORDER NOW.
M. E. BOGLE
Box 837, San Antonio, Texas

SCOTTISH TERRIERS
Beautiful stock now ready for delivery.
Priced Reasonably
LOGANBRAE KENNELS
Rutland Vermont

UTICA Duxbak CORP.
TRADE MARK

YOU get the clothes you want in Duxbaks. Genuine pivot sleeves that *do* free your arms. Genuine Duxbak "sheds water like a duck's back" cloth—softer, yet much more durable. Genuine Duxbak superior tailoring. Highest quality at only a trifle more cost. See your Dealer, or write us. New book, "Serviceable Clothes," FREE.
Utica-Duxbak Corp., 40 Noyes St., Utica, N. Y.

WILD FLOWERING PLANTS

Beautify city lot or large estate. For land and water, 60 natural food plants—berry-bearing shrubs that attract birds, fish and animals. Suggestions—prices free.

Terrell's Aquatic Farm
16C Blk. Oshkosh, Wis.

ATTRACT WILD DUCKS, FISH, MUSKRATS, UPLAND GAME BIRDS AND ANIMALS

Plant Natural Foods that will bring and hold large numbers at your favorite hunting or fishing grounds. Wild Rice, Wild Celery, Duck Potato and 30 others described in free illustrated book. Write, describe grounds, and receive free planting advice and book.

WISCONSIN AQUATIC NURSERIES, Box 331-K Oshkosh, Wis.

New England Plants

Native Trees and Shrubs, Wild Flowers and Ferns, as well as a nice line of Evergreens, Fruit Trees, Berry Plants and Vines, are offered in our 1929 catalog. May we send you a copy?

GEO. D. AIKEN
Box H
Putney, Vermont

Charting Avian Highways

(*Continued from page 235*)

ing by hazard and alone. Marsh hawks, banded in Ontario, have been taken in North Carolina and Florida, and those banded in Illinois have been reported from Texas and Michigan. Two duck hawks, banded in Russell, Massachusetts, on the same day, were both killed the next spring, one in Pennsylvania and the other in Virginia. Another was banded at King's Point, Yukon, in July, 1924, and trapped at Duchesne, Utah, about 2,500 miles from the point of banding, the following February. A snowy owl crossed from Hoover Bay, Alaska, to King Island, on the opposite side of the Bering Sea. It made the trip between July and November, 1924.

Although 11,000 chimney swifts have been captured and banded their airway has not been charted at all definitely. Some ornithologists believe that they spend the winter months in the Rain Forest at the mouth of the Amazon River, a region that has been little explored. Specimens have been retaken at the different bird stations in both spring and fall, indicating that the same route is followed during both migrations, but the airways outside of the United States are quite unknown.

Of small non-game birds that everyone knows, the most numerous returns have come from the blackbirds, purple grackles, jays, finches, sparrows, and robins, but not enough evidence has accumulated yet to map the courses followed in their flights. Some of the tiniest of these have established long flight records, notably a purple finch that flew from Norwalk, Connecticut, to Haynesville, Louisiana, and another of the same species that traveled in five months or less from Peterboro, New Hampshire, to Thornton, Texas. A tiny song sparrow, marked at Waterford, Maine, was captured at Jacksonville, Georgia, four months later, and another, banded at Danvers, Massachusetts, was retaken between two and three months later at Weymouth, Nova Scotia.

Bird banding has proved to be such a fascinating avocation that the Bureau has been swamped with requests for permits to operate stations, Mr. Lincoln states. Approximately two hundred applications had to be turned down during 1928, because facilities are lacking to extend the scope of operations. But many can share in the work, he adds, by reporting to the bureau any banded birds which they find, giving the number of the band, accurately written, and a report of when and where it was found, together with other information they may have regarding it.

END the DUST NUISANCE .... Before It Begins!

KEEP this outdoor season dustless. Right now order Solvay Calcium Chloride to apply on gravel walks, driveways, bridle paths, clay tennis courts and any surface from which dust is likely to arise.

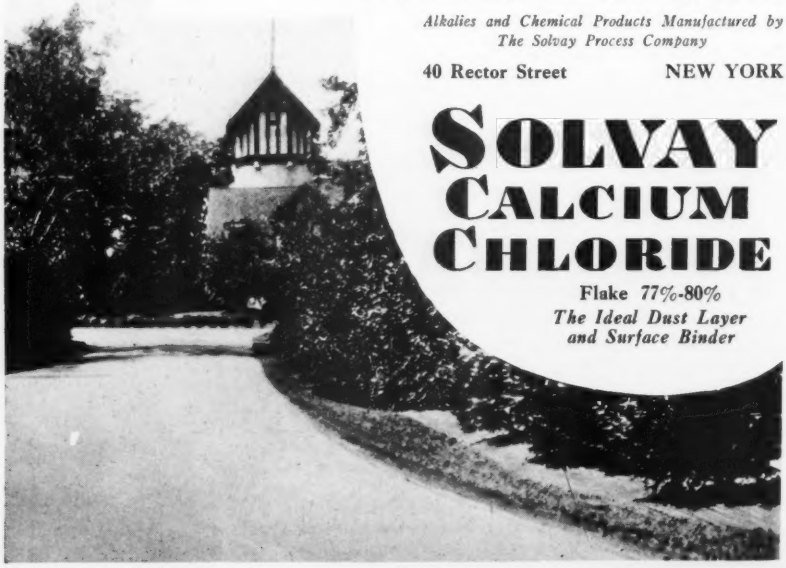
Solvay Calcium Chloride prevents formation of dust and keeps surfaces in excellent condition. It is clean, white and odorless. Will not harm clothing, tires, car finishes or horses' hoofs. Does not track or stain.

Write for Booklet 5757

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 Rector Street NEW YORK



SOLVAY CALCIUM CHLORIDE

Flake 77%-80%
The Ideal Dust Layer and Surface Binder

The Park of a Million Bones

(*Continued from page 208*)

have mistaken the oily pools for water, or after heavy rains the water standing on the surface of the pools may have deceived them. In any case once the animal stepped or fell into the viscous mass it was doomed. Herbivores attracted the carnivores by their death screams, and in making attack the latter also became entrapped, to be followed by the carrion-eaters.

Even today small animals and birds are caught in small pools, in some cases less than an inch deep. As the prehistoric animals were entrapped in these pits over probably a large period of the Pleistocene epoch, which extended from 200,000 to 500,000 years, it is apparent how so many could have accumulated in so small an area. Virtually all of the North American animals of this period are represented here—the mammoth, mastodon, Imperial elephant, cave bears, wolves, ancient oxen, giant ground sloths, deers, foxes, birds, camels, horses and the sabre-toothed tiger—so-called, although he is more closely related to a giant wildcat. Only one human skull was found, but this has not yet been proved that of a Pleistocene man, if such existed in this territory.

When the asphalt beds were first discovered fifty years ago little importance was attached to the bones found in them. In fact, at one period of the commercial excavation of the asphaltum, workmen actually used the bones as fuel in heating the mass in order to free it from other bones.

While fossils may have been deposited in other localities in as great a number as at

Rancho La Brea, in most cases they have disintegrated in contact with soil and water, or when exposed to the air. At La Brea the oil has preserved them in beautiful, undamaged condition.

Louisiana Plants Ten Million Trees

More than ten million trees have been planted in Louisiana during the 1928-29 planting season, according to a statement issued by the Louisiana Division of Forestry. The total of hand-planted forests and woodlots in the State now stands at 28,000 acres, which represents the planting of about twenty-five million trees.

Most of the planting has been done by lumber and paper companies on their cut over lands. The outstanding example of this type of planting is furnished by the Great Southern Lumber Company, at Bogalusa, where plantings this year were in excess of six million trees, all of which were grown in its own nurseries. Other companies engaging in similar activities and operating pine nurseries of their own are the Long-Bell Lumber Company at DeRidder; Industrial Lumber Company, Elizabeth; Krause and Managan Lumber Company, Lake Charles; and the Brown Paper Mill Company, Incorporated, Monroe, Louisiana. The combined output of the nurseries operated by these companies is about 2,500,000 trees.

IT IS SPRING

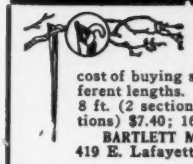
It is spring!
I know, because the red-bird sings
A livelier tune.

It is spring!
I know, because the south-wind brings
A balmier noon.

It is spring!
I know, because the soft night flings
A mistier moon.

Jennie Reed.

Trim Your Trees Yourself



It's easy if you use a Bartlett Jointed Tree Trimmer with a compound lever. Saves cost of buying several trimmers of different lengths. Prices F. O. B. Detroit 8 ft. (2 sections) $6.60; 12 ft. (3 sections) $7.40; 16 ft. (4 sections) $8.20.
BARTLETT MANUFACTURING CO.
419 E. Lafayette Ave., Detroit, Mich.

Scott's Creeping Bent for Perfect Lawns

Sod in six weeks! A rich, velvety stretch of lawn that chokes out weeds before they can grow! A deep, thick, uniform turf that's everlasting and makes your home a beauty spot! That's what you'll get if you plant Scott's Creeping Bent.

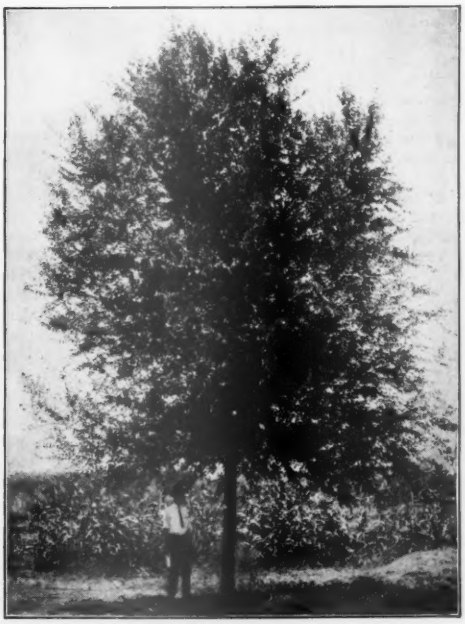
The New Super-Lawn

Creeping Bent -- long recognized as the ideal grass for golf putting greens -- is now producing Super Lawns. Instead of sowing seed, you plant stolons or the chopped grass -- and in a few weeks you have a luxuriant lawn like the deep green pile of a Turkish carpet. Read all about this unusual grass in our illustrated booklet "Bent Lawns." Mailed on request.

O. M. SCOTT & SONS CO.
331 Main Street Marysville, Ohio

Read about the Siberian Elm

The newly discovered wonder tree of rare beauty and rapid growth



The photograph shows a Siberian Elm only 5 years from planting a whip. This beautiful shade tree grows virtually twice as fast as the maples and American Elm.

This home shade tree offers quick results. It develops the full shape of the Norway maple, with rich green, clean-cut foliage—at an astonishing rate of growth.

The Siberian Elm will thrive under conditions of soil and exposure that would prevent other shade trees from thriving. It will stand intense cold and heat. It will flourish in "poor soil."

If you want to have lovely shade trees about your home—if you want to have a tree-lined street—if you want to increase the value of bare lots by surrounding them with fine shade trees—the Siberian Elm offers a new way. With this remarkable tree you will not have to wait years for results. You will experience the pleasure of seeing a whip turn into a tree the very first year.

This season we have an unusually fine supply of Siberian Elms at lower prices. Wire or write your reservation for this spring now. Instructions for planting will accompany each shipment.

EVERY TREE GUARANTEED TO LIVE

Any Guild tree which may fail to flourish will be *replaced without cost to the planter within six months*

PRICES
5 to 6 foot trees

1 tree . . .	$2.50
3 trees . . .	$7.00
10 trees . . .	$20.00

If you prefer a fully prepaid shipment add 10% for delivery charges—otherwise shipment will be made C. O. D.

THE LIVING TREE GUILD
Dept. 339
468 Fourth Avenue
New York, N. Y.:

You may send at the right time for planting in the spring..... Siberian Elms. If my check is not enclosed you may deliver C. O. D. Kindly acknowledge this reservation.

Name .....
Address .....
City ..... State .....

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EVERY kind—the rare in color tinges and shape, as well as common. 500-acre nursery, nothing but evergreens. Write for de luxe catalog in colors. Enclose 25c, refunded with first order.

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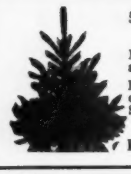

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The Forest Post-Bag

So many letters of interest drop out of our mail bag each morning that the editors have decided to be generous with some of them. So—watch for the Forest Post Bag, learn what "they" think, and share our pleasure and profit. Comment on this column is invited.

Having at least "pulled an oar," this friendly note is appreciated.

"I take this occasion to express my gratification and extend my warmest congratulations to your officers, whose indefatigable efforts and work have succeeded in bringing a tardy Congress to pass the Norbeck Conservation Bill.

"The benefits to be derived from a successful working of this law are incalculable and, unlike most natural conservation methods, its benefits will be enjoyed almost from the very beginning."

Charles J. Michal,
Hinsdale, Illinois.

A heartening word comes from Albert Doyle, of Craigsville, Virginia, and the lost is saved!

"I was about to drop my subscription to the magazine, thinking I could not afford so many magazines, when you came along in October with just my kind of an issue. I am glad to see you have so much to appeal to a hunter or, as Roosevelt termed himself, 'hunter-naturalist.' It seems like your magazine with a little more of that which pertains to the hunting field in the autumn would fill a long-felt want among my kind.

"I take other outdoor magazines, but they seem lacking in some way—possibly not so well edited. Anyway, here's my subscription for another year, and I'm hoping to receive more copies like October."

An urge to look—not to our laurels but to our elms—is carried in the letter of William R. Thornhill, of Readville, Massachusetts, with which he sends the following clipping: "A disease, new to this country but prevalent in Holland and Belgium, a fungus which attacks elm trees, has, it is reported, made its appearance in the Isle of Wight, where a recent survey has shown that over one hundred elms are seriously affected. Trees attacked by this enemy rapidly wither and die, and so far the science of mycology is not able to indicate a cure or preventive. The Royal parks, which the public of this district value so highly, contain many elm trees of magnificent proportions, to which any extensive trouble of this kind would prove disastrous." Mr. Thornhill comments:

"I have just read this clipping from an English newspaper and seek to pass it along where it will do the most good, as I realize that if the disease ever reaches this country it will be a difficult thing to handle. After losing all our chestnuts and with a threat over our pines, we have no great ambition left to worry over our elms."

Keen and helpful interest in the future of the chestnut in this country is expressed in a letter from John Stuart Thomson, of Jersey City, world traveler and author:

"The American chestnut tree (*Castanea americana*), not the horse chestnut, may be resuscitated. As your readers may know, the valuable American chestnut tree (our best tree in many respects), was destroyed by a blight over the whole nation some years ago. While spending part of this summer in your section, a number of friends asked me about the hope that the tree might be revived, and therefore I gladly give you the attached letter, which please reprint. Anyone can do a great service for America, and for the protection of nature, by working for the recovery of this noble tree—so straight and tall, so beautiful, so permanent in its wood value. Guard the sprouts, save the seed, and communicate with the federal government as requested. I myself visited many old stumps in your section, and saw the sprouts coming up around the old stumps. It would be a good idea to put up a sign on the stump, and say that the United States Government requests its protection, both by the owner and by the public. School teachers might well convey this information to their pupils. Kiwanis, as well as boy's, girl's and women's clubs, Rotarians, athletic clubs, Elks and other patriotic bodies might well assist in bringing back to America perhaps its greatest tree—its lost tree, as matters now stand."

* * *

To Dr. John Stuart Thomson from G. F. Gravatt, Senior Pathologist of the Bureau of

Plant Industry of the United States Department of Agriculture at Washington — reprinted at his request:

"With reference to your recent letter to this department, the American chestnut tree is not likely to be exterminated, due to the wonderful fact, after many years, that some of the sprouts in some of the older parts of the infected regions are now reaching sufficient size to produce nuts. It is just a sprout here and there that is able to reproduce, but we think that these few will be sufficient to keep this great species of tree in existence for many years. It is not nature, as you feared, that is committing suicide in bowing to this chestnut blight. The blight was brought to this country from Asia, and so it is man's interference that has caused the death of the chestnut tree in America.

"This office is interested in locating unusually resistant sprouts of the American chestnut tree which are producing seed, and if you or your friends come across any, we would appreciate receiving information regarding the exact location of the sprouts and the name and address of the owner."

Parks Conference in May

The National Conference on State Parks will be held at Clifty Falls State Park, near Madison, Indiana, May 7, 8 and 9, according to an announcement made by the Indiana Department of Conservation. The first two days will be devoted to speaking and business meetings. The third day will be featured by a field trip through the park.

California Gives Trees to Haiti

An assortment of California redwoods and of pines and other conifers native to California are to be planted this fall in Haiti, in the gardens of President Borno. At the suggestion of State Forester Pratt, Governor Young of California directed that the trees be taken from the State nursery and sent as a gift to the Haitian president, who is a tree enthusiast.

Dry Spring Restored

A spring which once supplied many families in the country surrounding Urania, Louisiana, but dry since the dense forest surrounding it was cut in 1898, now furnishes water more abundantly than ever and does not fail even in seasons of severe drought. The spring was restored by reforestation of the denuded land, begun by Henry E. Hardtner in 1910; it first began to flow five years later, when the land was occupied completely by a fine stand of young trees. Mr. Hardtner is carrying out the oldest reforestation contract in Louisiana, on a tract of 28,000 acres.

Many experimental plots have been established on this land, especially for studies of the rate of tree growth. The work has attracted much interest on the part of foresters and for years each class graduated from the Yale Forest School has been brought to the Urania Forest for its spring camp work.

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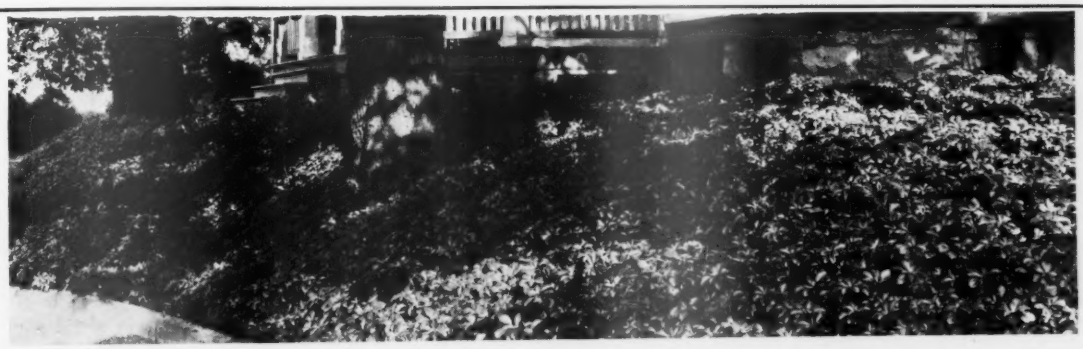

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Forestry Legislation in Congress

By G. H. COLLINGWOOD

Forester, The American Forestry Association

With the adjournment of the Seventieth Congress on March 4 there closed a session remarkable for its surprises and disappointments to those interested in forestry and conservation legislation. The present report deals more with legislation affecting the National Parks than the National Forests. Appropriations for forestry were enumerated in the report for March, and were approved by the President on February 21. The only addition to these items included in the Deficiency bills which occupied the attention of Congress during the closing days of the session was $80,000 for carrying into effect the provisions of the Migratory Bird Conservation Law. For a time there were fears that one of these bills would carry a rider to reduce the salaries of all technical and administrative employes of the government who now receive $3800 or more. This would have affected the Forest Service, the Biological Survey, the National Park Service, and all the other government bureaus. The rider was included in the bill as it passed the House, but Senator Brookhart succeeded in securing the passage of an alternative measure which met the approval of the House.

Perhaps the greatest surprise of the session was the passage of the Ouachita National Park bill (H. R. 5729) on February 27. This bill, however, was vetoed by President Coolidge. The Senate version of the bill (S. 675) was brought up unexpectedly on January 16 and passed without opposition. Even then for more than a week there seemed to be no chance for it to be brought up on the floor of the House. On February 22 the backers of the bill secured a special rule which gave the Senate bill a preferred place upon the House calendar. Representative Colton, of Utah, chairman of the House Committee on Public Lands, and Representative Cramton of Michigan made a valiant fight to stop its passage. The glamour which surrounds the supposed recreational features of a National Park as compared with similar opportunities in a National Forest combined with sectional pride to blind the eyes of many members of Congress. Although three hundred and fifty members were in the House when the discussion began, the bill passed by only one hundred and sixty four to seventy-one. The bill was actively opposed by the National Park Service and its supporters as well as by the Forest Service and The American Forestry Association.

The struggle between the House and the Senate over the Appropriation bill for the Department of the Interior threatened to become very serious and the bill was not passed until March 2. The difficulties centered around a single clause in the House amendment of the bill which authorized the National Park Service to acquire by purchase, or otherwise, private lands within the Na-

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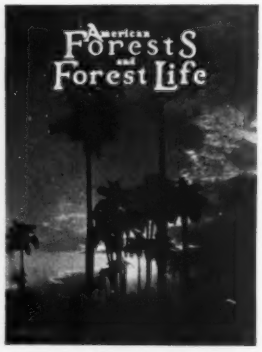

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tional Parks. The clause in question, to which the Senate, through the leadership of Senator Walsh of Montana, strenuously objected, gave the Secretary of Interior the power to condemn lands for purchase when necessary to assure their acquirement. The disagreement between the two Houses was finally broken by a compromise whereby the power of condemnation under the provisions of the act of August 1, 1888, was retained but such condemnation proceedings are "not to be resorted to for acquisition of lands in Arcadia, Glacier, Grand Canyon, Great Smoky, Hot Springs, Platt, or Yellowstone National Parks not leased to others but occupied by the owner and used exclusively for residence or religious purposes by such owner." The full force and effect of this change, it is said, is to give the Secretary of the Interior full power and authority to condemn any lands within any of the National Parks except those used exclusively for residence or religious purposes in the parks specificially named.

The Shipstead-Newton bill (S. 3913) to maintain water levels in lakes and streams and encourage a uniform plan of management for areas within the Superior National Forest in northern Minnesota and areas in Canada within the Quetico Provincial Park was reported favorably by the House Committee on Public Lands on February 26. This bill was introduced in the House by Representative Walter Newton, of Minnesota, and in the Senate by Senator Shipstead.

Senator Fletcher's bill (S. 4704) authorizing the Secretary of the Interior to investigate and report to Congress on the advisability of establishing a National Park in southern Florida to be known as the Tropic Everglades National Park was signed by the President on March 2. This bill passed the Senate on January 26 and the House on February 25. On February 26, the Senate agreed to the House amendments which include the request that the Secretary state his opinion as to whether this area measures to National Park standards.

On February 25, the President signed the bill (S. 5543) creating the Grand Teton National Park in the State of Wyoming.

On February 28, the President signed Senate Joint Resolution 206, authorizing the appointment of a Yellowstone Park Boundary Commission, and on February 25 the House passed S. 3001, giving authorization to revise the boundaries of that park in relation to adjoining National Forests. The ultimate boundary will be natural rather than arbitrary. This bill was passed by the Senate on February 7 and the House amendments were agreed to on the 27th.

A bill (H. R. 17221) to preserve and consolidate certain timber stands along the western boundary of the Yosemite National Park was reported favorably by the House Committee on Public Lands. This would authorize the President upon recommendation of the Secretary of Agriculture and the Secretary of the Interior to consolidate certain holdings now outside of the park boundaries with similar holdings within the park.

Senator Nye's bill (S. 4385) to create the Teton National Monument in the Badlands of South Dakota was sent to the House for conference on February 28. This bill passed the Senate May 23, 1928, and after amending it the House passed it on February 25.

The Senate has appointed Senator Peter Norbeck of South Dakota and Senator Hawes of Missouri as its representatives on the Migratory Bird Conservation Commission, which the President approved on February 18.

Elk Offered Free to Public

Surplus elk from the National Bison Range are being offered by the United States Biological Survey to anyone who will remove them without cost to the government. The National Bison Range is in western Montana. Because the elk there have increased beyond the carrying capacity of the range, it is necessary further to reduce their numbers, it was said, even though some of the surplus animals have already been disposed of by sale.

California-Cornell Exchange

An exchange of professors in the field of forest utilization has been approved by the University of California and by Cornell University. The principals are Professors Emanuel Fritz and A. B. Recknagel. The former has been at the University of California since 1919, teaching wood technology and lumbering. Professor Recknagel has been at Cornell University since 1913 and is now teaching wood technology, forest utilization and forest management.

Professor Recknagel goes to California for the fall semester of 1929, and Professor Fritz will be at Cornell for the spring semester of 1930.

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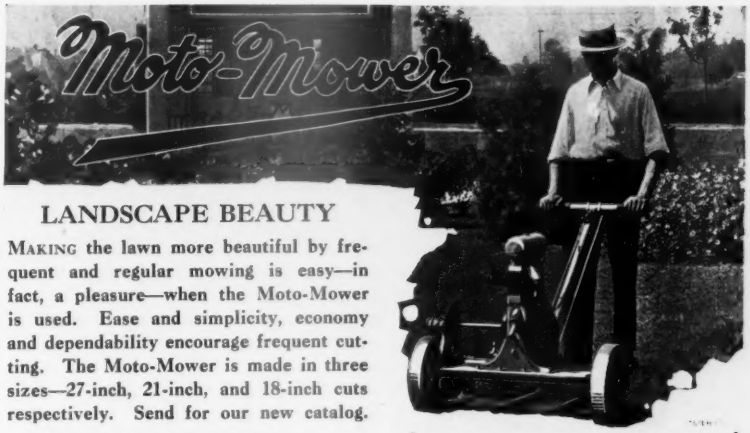

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Book News and Reviews

TREES AND FORESTS OF WESTERN UNITED STATES, by Edward John Hanzlik. Published privately, 502 Concord Bldg., Portland, Oregon. Price $2.50.

This is a book which will fill a need which has long existed for a popular yet accurate publication on trees of the Western States.

The book covers a field which is not covered either by Sudworth's bulletin "Forest Trees of the Pacific Slope" (now very difficult to secure and too technical for popular use) nor by any of the numerous botanies.

To mention just a few of the chapter headings will give an idea of the scope of the publication: Trees and Their Growth, Classification of Plants, Western Forest Regions, Forest Areas by Regions, Western National Forests, Key to the Conifers, Tree Descriptions (90 pages) of the principal and important western woods, leaves, needles, cones, fruit, structure, form, wood, uses, etc., all in non-technical but accurate language.

Mechanically, Hanzlik's book has 8 chapters, 128 pages, 25 half tones, 9 line drawings and a map; is 6" x 9" in size, and is well and very attractively bound in dark green cloth.

Mr. Hanzlik has had over fifteen years' experience in the United States Forest Service on technical studies largely, and spent a year in Sweden in 1922-3 as Fellow of the American-Scandinavian Foundation. He is part author of two government bulletins on tree studies, and a frequent contributor to technical forestry and lumber trade journals. Mr. Hanzlik's book is a valuable contribution to western forestry literature and will prove most useful to high schools, teachers, libraries, timber owners, foresters, and the public generally. It should be ordered direct from the author at the above address.

—J. D. G.

MAKING BEST USE OF IDLE LANDS IN NEW YORK. Bulletin No. 17 of the State College of Forestry, Syracuse, N. Y. By John Wallace Stephen.—This bulletin answers many of the questions that arise in the minds of people with idle lands or with forest lands which they wish to place under forest management. It is in the nature of a first reader in forestry.

FOREST INSURANCE AND ITS APPLICATION IN MICHIGAN. By Paul A. Herbert. 34pp. September, 1928. Special Bulletin No. 179. Michigan State College, East Lansing, Michigan.

Including a brief history of the development of forest fire insurance in Europe and more particularly in this country, Mr. Herbert points out some of the problems which must be solved before American companies can undertake extensive underwriting of our forests. A large coverage at a low cost are first essentials, with the natural corollary that companies must be willing and able to write all the coverage demanded. Many of the problems which will arise are so peculiar to this kind of risk that Mr. Herbert believes they cannot be adequately handled by insurance men without forestry training.—G.H.C.

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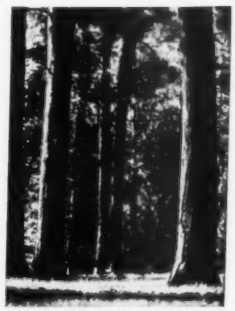
Ask the Forester?



Each Month Forestry Questions Submitted to the Association Will Be Answered in This Column. If an Immediate Reply is Desired a Self-Addressed, Stamped Envelope Must Accompany Letter.

QUESTION: What is the difference between National Parks and National Monuments?—*T. P. S.*, New York.

ANSWER: National Parks are areas of original unmodified natural conditions, each of which is the finest example of its particular scenic type which the country possesses. The aim is to maintain all National Parks in a condition absolutely preserved from economic uses. Each National Park is created by special act of Congress and is administered by the National Park Service of the Interior Department. The National Park Service was created by Congress on October 24, 1916.

National Monuments were created under the American Antiquities Act of 1906, which authorized the President to protect historic landmarks, historic or prehistoric structures, and other objects of historic or scientific interest of national importance when situated upon lands owned or controlled by the United States. The Interior Department administers thirty-two of these, the Agricultural Department fifteen, and the War Department eleven.

QUESTION: What success, if any, has been obtained in the planting of Douglas fir in northern climates on the East coast, such as Maine and New Hampshire?—*M. F. B., Maine.*

ANSWER: Perhaps the most notable planting of Douglas fir is on light soil in eastern Rhode Island on the Goddard Estate. This is a few miles from Providence. The trees have grown well but, unfortunately, they have been attacked by the European larch canker, a fungus disease accidentally imported some years ago. Doctor Haven Metcalf, of the Bureau of Plant Industry, United States Department of Agriculture, calls this one of the most threatening tree diseases that has reached America, because the Douglas fir is particularly susceptible to it. On the Cornell campus at Ithaca, New York, are a number of splendid specimens of Douglas fir now about fifty feet high. The planting of Douglas fir in the East for timber purposes is still in the experimental stage, but except for the danger of the larch canker a few plantations for experimental purposes may well be encouraged.

QUESTION: I wish information regarding the varieties of aspen trees and whether they will grow in Maryland.—*J. G. F.*, Maryland.

ANSWER: The tree most generally spoken of as aspen or quaking asp is *Populus tremuloides.* This grows nearly everywhere in the United States except the extreme southern regions. It is one of the few trees which is found on both Atlantic and Pacific Coasts. The aspen is not a large tree, although in some of the northern states it reaches a diameter of eighteen or twenty inches and a height of one hundred feet. The bark is a powdery, greenish-gray.

QUESTION: What are the conservation methods of lumbering, and what rules and regulations has the government to insure them?—*E. S.*, Kansas.

ANSWER: Conservative methods of lumbering are determined by the local conditions, but they all have as their goal a permanent forest cover with repeated crops of forest products. This is called sustained yield. All the National Forests are managed to the end that a sustained annual yield may be maintained. The Government is attempting through education and financial cooperation to encourage this practice on the part of private timberland owners, but it exerts no compulsion.

QUESTION: Are there any wild animal refuges in which domestic cattle and sheep may not be pastured legally?—*G. B. B., California.*

ANSWER: Two National Forests include wild animal refuges. The Wichita National Forest, in Oklahoma, is the home of a large herd of buffalo, and more recently of a herd of longhorned cattle. The buffalo and cattle are confined within a fence. This is in contrast to the game refuge on the Kaibab, although there are no fences on the Kaibab, as the character of the country serves to confine most of the deer within the area of protection. A game preserve also exists upon the Pisgah National Forest, in North Carolina. This is not supplemented by fences but the fact that a large portion of the forest is surrounded by private shooting grounds serves to hold most of the animals within the preserve.

Conference Reflects New Era in Forestry

(*Continued from page* 216)

Fairchild's enlightening talk was especially timely inasmuch as President Coolidge signed the bill authorizing the investigation by Congress of the Tropical Everglades National Park project just before he left the White House. After painting a glowing picture of the wonders and beauties of the Everglades, its trees, its flora, and its wild life, Dr. Fairchild asked the support of the foresters and conservationists of the nation in realizing the only National Park in the far South. "In no other of the tropical regions of the world have I seen anything like those fascinating hammocks which dot the level plains of the Florida Everglades," he said. "When these hammocks come down to the water's edge they merge into those strangest of all the plant associations of the world—the mangrove swamps. Nowhere have I seen such magnificent mangrove vegetation as that which characterizes the southern Everglades. Nowhere in all my experiences have I seen greater numbers of orchids or more magnificent specimens than abound there. So beautiful are they and so near the dooryards of a hundred thousand people, that if something is not done to preserve them they will soon be stripped from the hammocks and trees and perish from neglect in the private yards of careless citizens.

"When one speaks of natural beauties, beauties which the fortuitous forces of nature have taken thousands of years to create, 'gone forever' are ugly words. There are still left in the areas which might properly be selected for a National Park the remnants of a wild fauna which is unique on the mainland of the United States. This remnant will disappear if not protected."

He concluded his address with a description of the Everglades wild life, now near extinct, and warned: "I fear we are drifting toward a busier, a more comfortable, a wiser, but not a more beautiful existence, when we let the tiller swing and fail to look ahead and see our own country as a densely built up China-like one of buildings, streets, roads and sidewalks."

"The Age of Wood Fibre and What It Means to the South" was the subject of a paper presented by Reuben B. Robertson, of the Champion Fibre Company, Canton, North Carolina. In part, Mr. Robertson said: "From the hour of birth to the hour of death we are in constant contact with some product of wood fibre. The ribbons which decorate the week-old infant and the silk lining of the final casket are likely to have had a wood fibre origin."

Declaring that the annual growth of timber suitable for the manufacture of wood fibre for the entire United States amounts to over nine billion feet, and the annual growth of the South to four billion feet, Mr. Robertson urged that the forest policy of the South be one of patient conservatism rather than aggressive promotion of industrial development. "The South needs a breathing spell," he said, "which would afford opportunity for recovery from her too recent orgy of overcutting of timber. The South needs growth—growth of timber as well as growth of sentiment favorable to scientific forestry."

Will forestry pay dividends? It is a much discussed subject, and created a great amount of interest when it was discussed by Alex K. Sessoms, of the Timber Products Company, Cogswell, Georgia. "The correct answer to this question," said Mr. Sessoms, "depends on whether or not reforestation can be carried on by private companies and individuals.

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"First we must consider some of the items that enter into the cost of forestry. A forest project must start on cheap land, because compound interest must be calculated and charged as part of the cost on every dollar invested. When it is necessary to plant trees to secure a fully stocked stand, that is a very heavy expense. Land growing timber must be protected from fire and in some sections the seedlings protected from insect and fungus pests and diseases. In most all cases thinning is necessary either to cut out the proper stand where natural reseeding takes place, or to cut out undesirable species which naturally come in. Taxes, supervision and management are a constant and annual charge, and last we have a compound interest charge on every dollar spent, which makes it imperative that costs be kept at a minimum and that returns begin to come in at the earliest possible moment."

As to returns, Mr. Sessoms declared that where there are no returns until the timber crop has matured it is impossible to make the project profitable, but when returns can be made by tapping the trees for naval stores or by utilizing the thinnings for pulp or other purposes, the final results are favorably and materially affected.

The session was concluded with a discussion of "Markets, Old and New, for Southern Pine Products," by Captain I. F. Eldredge, of the Superior Pine Products Company, Fargo, Georgia. After giving the history of the forest products market in the South and summing up the present market situation, Captain Eldredge declared: "We have every reason to believe and expect that the thousands of scientists now at work on research throughout this country and abroad will continue to open up new uses for wood material. There is no cheaper cellulose than that produced in our fast growing southern woods and we will, without a doubt, get our full share of any new business that develops."

Thursday evening was devoted to demonstration by talks, motion pictures and lantern slides of the work and methods employed in the Association's Southern Forestry Educational Project. W. C. McCormick, Regional Director, reviewed the history of the project for which the Association raised $150,000, and told of the many problems encountered in carrying out the work, and how they were being solved. W. R. Dunlap and J. B. Toler, who are assigned to Mississippi, gave a demonstration of a typical lecture and motion picture show, while C. B. Beall, in Georgia, gave a talk typical of those given before civic organizations. Earl T. Taylor demonstrated the sort of talk that is given in small schools unsuited for motion picture programs.

On Wednesday evening a banquet was given in the Japanese Grill Room of the Windsor Hotel. Ralph W. Gwinn, Vice-President of the Penney-Gwinn Corporation, New York, was toastmaster. The speakers were Miss Martha Berry, of the Berry Schools, Mount Berry, Georgia, who told of the wonderful part the forests have played in real-

Four Large Tracts of Timber For Sale

Sealed bids will be received until 12 o'clock noon, Pacific time, Tuesday, June 18, 1929, for the purchase of the standing timber on four large tracts within the Quinaielt Indian Reservation in western Washington. Each of the four units contains approximately four hundred fifty million feet of timber. The timber consists of cedar, spruce, Douglas fir, hemlock, white pine and white fir. The minimum prices that will be considered are $2.50 for cedar, spruce, Douglas fir and white pine on two of the units and $3.00 for the same species on the other two units. The minimum price that will be considered for hemlock, white fir, and other species on any of the units will be $1.00. Each bid should cover all species within the unit upon which a bid is presented. Each unit also contains a considerable quantity of cedar poles and Douglas fir piling which will be sold by the linear foot. The units are Lunch Creek, Joe Creek, Raft River, and Cape Elizabeth.

The original prices bid will remain in effect until April 1, 1933, at which date the prices on all species and classes of timber products may be increased in the discretion of the Commissioner of Indian Affairs. The increases will be based upon the increase in the average price of logs in the Grays Harbor region during the three-year period ending December 31, 1932, over the average price during the three-year period ending December 31, 1928, as stipulated in the contract of sale. In determining an increase in price of stumpage consideration will be given to any increase or decrease in the cost of log production during the same periods and the increase in price of stumpage of any species will not be greater than one-half the increase in price of logs during the said three-year period ending December 31, 1932. Each three years subsequent to April 1, 1933, the Commissioner may increase stumpage prices in the same manner as for the period beginning April 1, 1933. On each of the sales 5,000,000 feet must be removed prior to March 31, 1933, and not less than 25,000,000 feet during each twelve months thereafter until all timber is cut from each unit. The contracts contemplate the removal of all timber prior to March 31, 1951.

All bids must be submitted to the Taholah Indian Agency at Hoquiam, Washington, in duplicate, and each bid must be accompanied by a certified check on a solvent National Bank in the amount of $20,000. The deposits with bid will be returned to unsuccessful bidders, applied as part of the purchase price of successful bidder, or retained as liquidated damages if the successful bidder shall not execute contract and furnish a satisfactory bond for $50,000 within 60 days from the acceptance of his bid. The right to waive technical defects and to reject any or all bids is reserved. Copies of the advertisement, approved form of contract, topographic and stand maps of each unit, blanks for the submission of bids, and other information may be obtained from the Superintendent of the Taholah Indian Agency, Hoquiam, Washington.

CHAS. H. BURKE,
Commissioner.

Washington, D. C., March 7, 1929.

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American Forestry: Complete sets from 1911 to 1926, inclusive.

Forestry and Irrigation: February, 1907, 2 copies; June, July, 1908, one copy; September, 1907, one copy.

izing her dream of outdoor education for boys and girls of the rural districts of the South; Dr. John C. Merriam, President of the Carnegie Institution, Washington, D. C., who gave some scientific and social-economic aspects of reforestation work in the country; and Will C. Barnes, Secretary of the National Geographic Board, who told of the forest rangers and their work.

On Friday, March 1, several hundred people made the field trip to the Penney-Gwinn Farms and the Starke Branch of the Southern Forestry Experiment Station. A very unusual program was arranged, including inspection of a Tung Oil plantation, various experimental planting areas, and demonstrations at the Penney-Gwinn Experimental Turpentine Area. At the Penney Farms luncheon was served and a very interesting and instructive program brought forth such outstanding personalities as Ralph W. Gwinn and Dr. Burdette G. Lewis, of the Penney-Gwinn Corporation, and Dr. Wilmon Newell, Director of the Agricultural Experiment Station, at Gainesville, Florida.

Mr. Gwinn, speaking on the subject, "Reforestation, It's Relation to Agriculture," told the story of redeeming at the bare cost of taxes, in 1914, a waste, cut-over, burned area of 27,000 acres of pine land in northern Florida. The population that passed on the road side had assumed for ten or fifteen years, he said, that the property was absolutely worthless. But nature, in the moist places away from the road, had been working against fire and devastation so successfully that he was able, in 1920, to start a turpentine and timber operation that has continued every year, and, according to Mr. Gwinn, will continue indefinitely.

Other speakers were Frank Sisson, Vice-President of the Guaranty Trust Company, New York; Harry E. Lesan, President of the H. E. Lesan Advertising Agency, New York; Harry Lee Baker, State Forester of Florida; Sherwood J. Hall, District Manager, the James D. Lacey Company, New York; and H. M. Sebring, District Forester, Florida. In the afternoon the motorcade visited the fire observation tower of the Black Creek Forest Protective Association, where a demonstration of fire location was held. At Starke, Lenthall Wyman, of the Southern Forestry Experiment Station, explained the naval stores experiments being conducted there. Demonstrations were also givn of approved facing, tin setting and chipping.

Presentation of the "Forestry Cup," awarded by The American Forestry Association to the agency exihibiting the most effective educational material for the promotion of forestry, was awarded to the Mississippi Forest Service for a wolf-poster bearing the slogan "Fire, the Destroyer—Keep Him Out." Other agencies to win honorable mention were the Western Forestry and Conservation Association, Portland, Oregon, which was awarded the cup in 1928, and the Virginia Forest Service.

Radio Phones to Aid Forest Fire Fighting

Considered one of the outstanding accomplishments in the radio field during the past year, a new short-wave radio telephone system for the prevention and control of large forest fires was recently announced. The new forestry radio communication system was described before the Los Angeles section of the Institute of Radio Engineers by William S. Halstead, New York radio engineer, who is responsible for the valuable new short-wave radio application.

Diminutive portable transmitting and receiving units so small that they may be carried in rangers' pack sacks, are employed in the system. Its practicability was conclusively demonstrated in a series of tests conducted by Halstead and Royal V. Howard, Seattle radio engineer, at Rainier National Park, Washington, with the cooperation of the National Park Service.

A ranger, carrying the complete outfit, weighing less than sixty pounds, may approach within a short distance of a forest fire, and in a few minutes provide direct contact with a central station many miles away

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The penetrating ability of these signals, even in heavily wooded territory, is sufficient to cover the distances encountered in forestry work. During the tests, with a short aerial wire only a few feet above the ground, the signals of the small outfit at times were reported by amateur stations in California and Oregon. Plans are now under way to insure the adoption of the short-wave system in the Northwest before the next fire season.

Edmondson Gets Wyoming Post

William O. Edmondson has been appointed Extension Forester with the Agricultural Extension Service at Laramie, Wyoming. He is a graduate of the Colorado Agricultural College, and until recently was a County Agricultural Agent in Colorado.

Milwaukee Named Headquarters for Lake States Forest District

Establishment of headquarters for the new Lake States National Forest District at Milwaukee, Wisconsin, has been announced by the United States Forest Service. Since the first of the year, when the District was created, temporary headquarters have been maintained at Madison. E. W. Tinker, District Forester, will move to his new location immediately.

The Lake States District, comprising the States of Michigan, Wisconsin and Minnesota, was formerly a part of the Rocky Mountain National Forest District, with headquarters at Denver, Colorado.

WHO'S WHO
Among the Authors in This Issue

CHARLES W. ELIOT 2nd is City Planner of the National Capital Park and Planning Commission and a grandson of the late Charles W. Eliot, President of Harvard University. He was graduated from Harvard in 1920 and took up his work with the Commission when it was formed a few years later.

Charles W. Eliot, 2nd

ALMA CHESNUT has written much about scientific Washington, finding in the maze of government tests and experiments many human as well as thrilling revelations. She began her career in newspaper work, and was for a while associated with the *Baltimore American.*

Kenneth F. Lee

KENNETH F. LEE is a native of Augusta, Maine, and for ten years was connected with the State Department of Forestry. The story he relates in this issue is just one experience as Chief Forest Warden.

S. R. WOODS is a Forest Ranger assigned to the Chelan National Forest, Conconully, Washington.

HI SIBLEY began his career as a newspaper reporter on the *Indianapolis Times.* He was educated at Cornell University and now lives, and writes, at Pasadena, California.

HAROLD MOWRY is Assistant Horticulturist at the Agricultural Experiment Station, University of Florida. His particular interest lies in tropical and subtropical horticulture and ornamentals. He is a native of Kansas.

Harold Mowry

MAUDE C. JAMES, who knows her subject because she comes from a farm in Vermont's maple country, is a graduate of the University of Vermont.

ERLE KAUFFMAN is an Assistant Editor of AMERICAN FORESTS AND FOREST LIFE. ADELAIDE BORAH presents the fifth of her series on "Trees of the Bible," and LILIAN M. CROMELIN her fourth sketch on "American Artists of the Outdoors."

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The Wenatchee, Washington, fire department maintains a truck upon which a Type "P" Pumper is installed for use as auxiliary equipment, for emergency calls and use in outlying districts and neighboring communities which have no hydrant facilities.

Ready for Every Emergency

Using Type "N" Pumpers as auxiliary equipment to accompany the larger fire boats, in fighting dock fires, originated in Boston. Small boats can get under a burning dock and fight from below. They can be easily maneuvered. This equipment is ideal for fire protection for homes and other property at water resorts.

THE PACIFIC TYPE "N" PUMPER complete forms a well-balanced, light-weight pack, is easily transported by one man. The load is so arranged as to equally distribute the weight while carrying.

MANY diversified and often unique uses for Pacific Pumper equipment have developed within the past few years. The illustrations on this page indicate some of the ways in which these pumpers can be utilized for various purposes.

Wherever there is the need for employing water under forced pressure —for fire fighting, irrigating, mining, sluicing and many other uses—these little pumpers are almost invaluable. The first cost is moderate, the upkeep is practically nothing and the operating expense is so nominal that these pumpers lend themselves to a variety of uses and prove an excellent investment.

There is a type and size for every purpose. Our Fire Fighting Equipment Division will be glad to figure with any problem and advise the most suitable unit for the particular need.

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Fire Fighting Equipment Division

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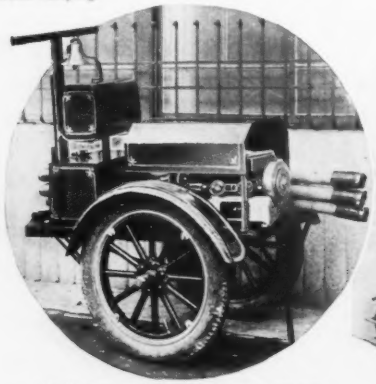
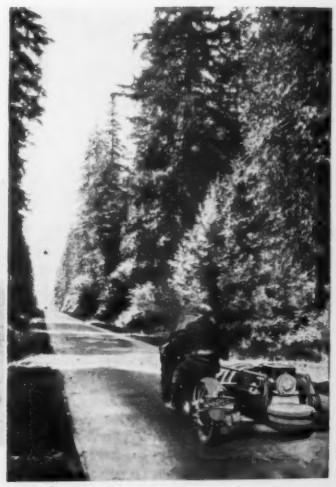


In Japanese villages, where streets are narrow, Type "N" Pumpers mounted on hand-drawn carts provide the municipal fire department equipment.

The Los Angeles, California, Forestry Department patrols the city's watershed with tank trucks of 500 gallons capacity each, with Type "N" Pumpers permanently installed on top of the tanks.



Type "P" Pumper mounted on fire warden's motorcycle car makes it possible to patrol large areas quickly and carry equipment for immediate use.

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